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THE BUILDER
A RECORD OF ARCHITECTURE & CONSTRUCTION

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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

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MORE HOUSING PROBLEMS.

LITERATURE on the housing problem continues to reach us in a constant stream, which grows in volume, and we make no apology for returning to this subject, for it is only by fixing attention on this urgent matter and endeavouring to seize the salient points that make for progress that we can hope to reach the much-wished-for solution which shall bring us all the homes we want, and indeed must have, for we regard this need as essentially bound up with the present industrial turmoil. In Mr. Rowntree's recent paper read before the Society of Arts we have an interesting résumé of the position, supported by some useful numerical data and some views which, having regard to the experience of the author, are entitled to be weighed. We are not merely faced with the problem of acquiring land and putting up a large number of houses in a very brief interval, but with the effect of what in itself is a very disturbing piece of emergency legislation on the property market, and matters of this kind—sometimes ignored in other quarters—are faced and discussed in the paper to which we allude. If nine per cent. of the population were living in overcrowded conditions—more than two to a room—in 1914, what must be the position now and how much worse must it be getting week by week as our men return? In England and Wales there were in 1911 eight million tenements and of these nearly a million possess only one or two rooms. Now, we hold that the only true solution of the housing problem is the natural production of houses to be let at an economic rent, and we think it necessary to press this point, because, however impossible such building may be just now, there is always a tendency to regard legislation devised to meet a special difficulty as in some measure a precedent for future action. Normally, if a thing is wanted a market price must be paid for it, and if difficulties in its acquisition arise an increased price has to be paid. Government subsidies we hold to be wrong in principle, and though necessary in the face of certain situations, they inevitably bring with them financial dislocations and inequalities, which disadvantages must be reckoned with and adjusted as far as may be in advance if stability is to be retained. Personally we regard the economic situation in the not distant future as very far from hopeless. Wages are going to be on a higher scale, less—it is to be hoped much less—is going to be fooled away on drink, and given "a bit of a garden," a good deal is likely to be saved in the purchase of food stuffs. Hence the worker should be able to pay a much greater rent than heretofore and we venture to predict that he will soon be ready to pay it. This is not the time to discuss the reasons which led to the great decrease in small house building prior to the war, but it is interesting to note that Mr. Rowntree does not ascribe this reduction to the Finance Act; he says that this view is not supported by evidence, and he thinks that fewer houses were built because rents did not increase proportionately with the price of building materials. The author estimates that if we build 325,000 houses this year we shall just catch up the war shortage, but that the pre-war shortage will still remain, for in spite of casualties the marriage rate has been high and emigration has temporarily ceased.

Mr. Rowntree is sanguine enough to believe that we can build 325,000 houses this year and points out that this will give employment to 400,000 men. Proceeding to contrast open development with gardens with the old style of street lay-out, at thirty to forty houses to the acre, it is stated that experience has shown that the omission of back and side roads in the former scheme reduces the cost of sewering and traffic ways to much the same in both cases, a highly encouraging conclusion. To meet the criticism that urban land is too dear to be laid out on the usually accepted basis of twelve houses to the acre, it is suggested that if this limit were legalised the value of the land would inevitably drop to a possible figure. This raises a rather difficult question as to land values of adjoining property already built upon—a matter which is not discussed.

The call for good planning and design is naturally emphasised, and with the remark, "it is very poor economy . . . to save a few pounds by dispensing with the services of a good architect," we cordially agree. In discussing house accommodation it is remarked that the development of education for adults will tend to make a separate room apart from the kitchen-living-room more necessary, and this suggests a hopeful use for the much discussed and demanded parlour. Discussing who is to build the houses, it is suggested that in the next two or three years most will be erected by the Local Authorities, as to which we must say that many people think that the actual erection should be rather undertaken by public utility societies, and that many Local Authorities appear much too slow and burdened with officialism to have any chance of "filling the bill," unless a giant comes among them. That this is foreseen is evident from the suggestion that local committees should be formed to stir up the authorities and public opinion. Although we seem to get more committees than houses, we commend this suggestion as very often the real local experts and those able to materially assist are not included among the local councillors. Finally, Mr. Rowntree deals with rents and the difficult question of the comparative rents of old and new property. What will happen on the inevitable repeal of the Increase of Rent Act we do not know, except that rents on old property will rise, and rise suddenly, unless this is prevented. Evidently rents of pre- and post-war houses will tend to approximate to one another to the benefit of owners of the former, and we do not think that such benefit should be altogether prevented, for the Act referred to has operated much more harshly than was probably intended. A system of differential rating is, however, suggested by rating post-war houses on the site value only, while pre-war property would be rated as before on the site and buildings. Additions to old buildings would not be the subject of increased rates. This would stimulate building and encourage the rebuilding of slum areas. The whole matter requires careful and expert consideration, and that very soon. There is much to be said for the suggestion but it must not be forgotten that a remission of rates on new property means an increase of rates on the old. The money has to be found, and if the new property does not bear its share the unfortunate dwellers in old houses will have to meet the borough expenditure not only in direct cases, but in the form of increased rent from tenants who do not pay rates themselves. Again, the question of the utilization of the larger old houses by conversion into maisonettes or flats will be affected materially by any scheme of differential rating, for we must know before we embark on such conversion into which category such converted houses will be placed. These are thorny problems and all tend to delay investment in building schemes. Let us have them debated and settled, but in the meantime let us get on and build something. We have taken a good many risks during the last four years, can afford one or two more to house our people, and let us see that the right ones get the houses when they are erected.

NOTES.

Memorial Buildings and Civic Societies.

We have on several occasions recently advocated the formation of civic arts associations in our provincial towns, as we believe that societies such as the London Society and the more recently formed civic association of Birmingham can do much useful work, not only in actively helping good proposals for the public improvement and beautification of a city, but in decisively condemning bad proposals. For that reason we are glad to note Professor Lethaby's remarks as to new memorial buildings in the first of the monthly "Observations and Suggestions" which he has kindly undertaken to contribute to our pages this year, and which appears on page 128. Here is work of the first importance, and plenty of it, for such societies, and we hope that where they do not exist they will be quickly formed. As Professor Lethaby says:—"Architects everywhere ought to be the first to move in these matters, for it is their business to; but, if they don't, we must appeal to all men of good will."

Help for Housing Schemes.

Under the approved scheme for the erection of 300,000 houses by Local Authorities the Treasury agreed to bear 75 per cent. of any loss incurred after seven years and the Local Authorities 25 per cent. The *Times* understands that these terms, so far as the Local Authorities are concerned, are under reconsideration, and that in the place of the 25 per cent., which is a practically unrestricted liability, the liability of the Local Authorities will be definitely restricted to the sum produced by the levy of a small extra rate.

Town Planning and Housing Course, Liverpool.

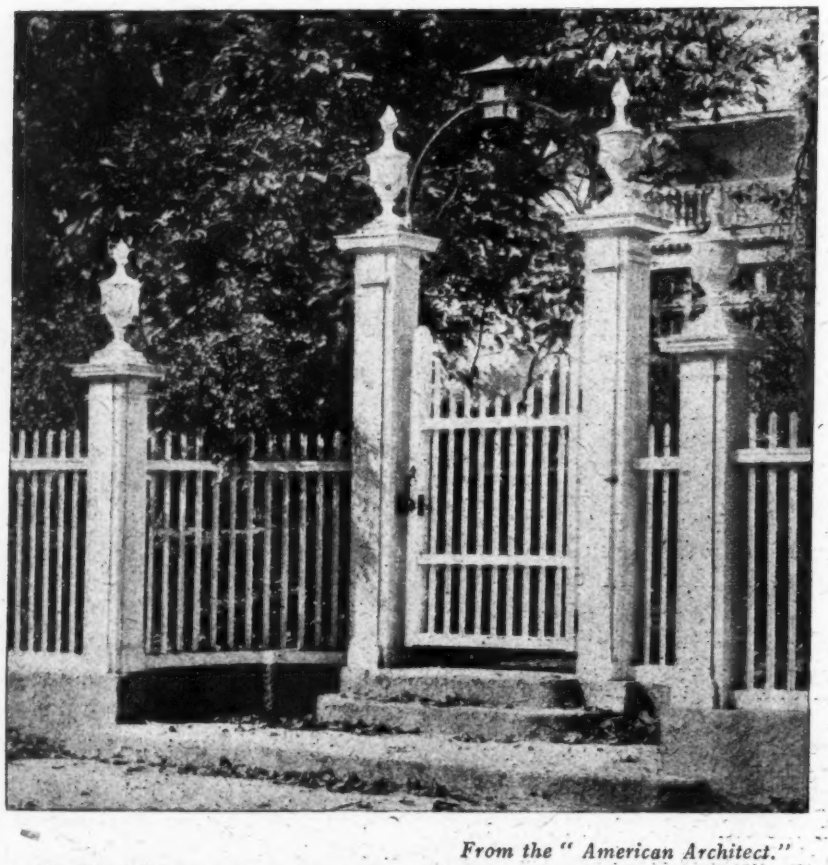
We have received the syllabuses of two short courses which have been specially arranged by the School of Architecture and the Department of Civic Design at Liverpool University to meet the needs of members of His Majesty's Forces, who, on demobilisation, feel the desire for reviving their technical accomplishments before returning to their normal course of life. The first, an architectural course, which is under the direction of Professor C. H. Reilly and Mr. C. B. Budden, is divided into three groups in order to meet the needs of architectural students according to their degrees of proficiency, and it will be possible for a student to proceed, if he feels the need, to one of the regular courses which the University offers. The course in the Department of Civic Design will last only six weeks, and is specially designed to put surveyors and architects into touch with those recent developments of housing and town planning which have occurred during the war. It is intentionally kept short so as not to prevent those attending taking part in the housing plans that are being prepared under the Government scheme. This course, which is under the direction of Professor Patrick Abercrombie, has the special approval of the Local Government Board, which is anxious that a large number of architects shall be available, in order that there may be no delay in the preparation of housing schemes. As many Local Authorities are still negotiating for the sites for their schemes it cannot be said that this course comes in any sense too late, and it is probable that schemes will be in preparation from now to the end of the present year. The course will consist of lectures and studio work and the Professor in charge will have the co-operation of Mr. Chaloner Dowdall, B.C.L., Mr. Sydney Kelly, F.S.I. and Mr. T. H. Mawson. The course will begin on Monday, February 17, and will last for six weeks.

City Churches.

We read that St. Katherine Coleman, the church which abuts on Fenchurch-street Station, is threatened with destruction, as the parishioners are to be polled on the question of the demolition of the building, and the joining of the parish to that of St. Olave. From time to time rumours have reached us of proposals to demolish some of the City churches and the subsequent amalgamation of parishes, but we hope nothing of the kind will be done unless the most urgent and convincing reasons can be given. There are very few of our City churches the demolition of which would not be the occasion of great regret to all who are interested in the history and architecture of London.

Another Proposal for the War Memorial.

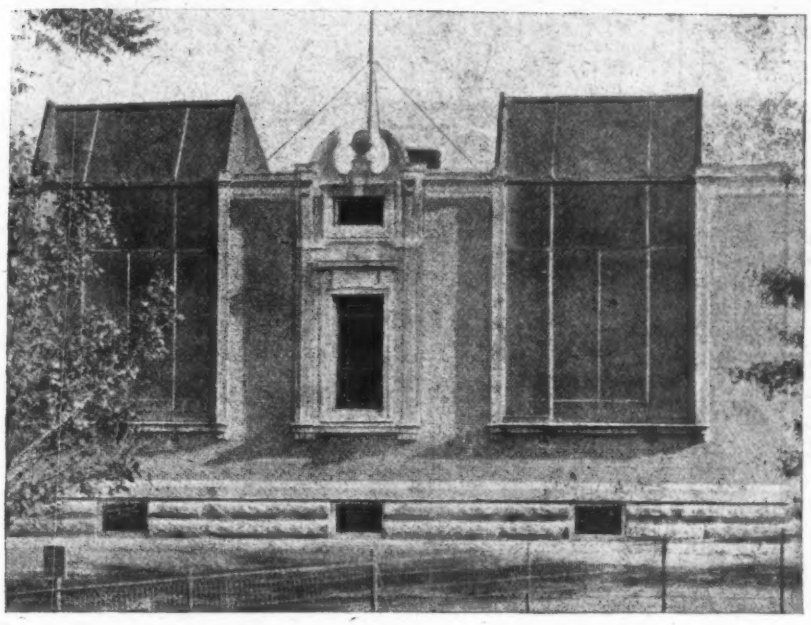
Prof. Beresford Pite deals, in the *Pall Mall Gazette* of the 29th ult., with the question of the War Memorial to be erected in London to give "significant and permanent expression to the victorious spirit of the era." He does not consider that a second Trafalgar-square, even if it could be found in Central London, would be an adequate scheme, nor a new bridge at Charing Cross, and he makes some interesting and important suggestions in reference to the Embankment. He hopes that the river and the Embankment during the past half-century have grown upon our affections and afford ground for civic patriotism. "Between the palaces of Greenwich and Fulham," he says, "the breadth and grand curves of the river adjust themselves to the idea of the main artery of the greatest of world capitals. The river affords a constant link in thought and fact with the sea, whose power belongs to the national idea. The Embankment,



From the "American Architect."

Detail of fence on grounds of Roger B. Merriman, Cambridge, Mass.

Messrs. Coolidge & Carlson, Architects.



From the "American Architect."

Free Hospital for Women, Brookline, Mass: Operating Building.

MESSRS. COOLIDGE & CARLSON, ARCHITECTS.

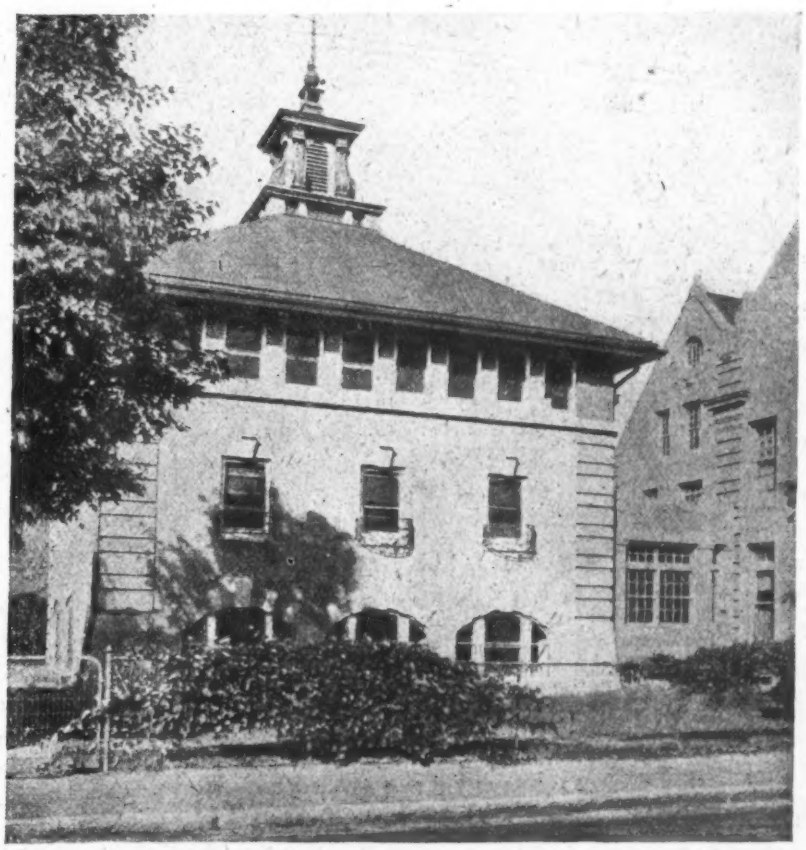
in itself a work of great architectural restraint and beauty, is not rivalled in European cities in its special attributes of dignity and usefulness and in providing a foreground to the architectural landscape of the City, presented by St. Paul's upon the hill, Somerset House and Waterloo Bridge and the picturesque group at Westminster."

The Southern Side.

PROF. PITE'S suggestions specifically deal with the south side of the river, and he makes proposals for the War Memorial which, we believe, will make a strong appeal to the public. He points out that upon the south side of the river is an area equally extensive as the Victoria Embankment, nor occupied closely with buildings of any importance; "in fact, there is none between the new County Hall at Westminster and the Cathedral at Southwark, the disappearance of which would cause architectural regret. Here a clearance could be made without inordinate expense or sacrifice that would provide behind a continuous embankment wall a breadth of road and public gardens for a distance of two miles or so. This clearance and reclamation would sweeten the whole of the southern city, afford positions for a series of national memorials of conspicuous importance, sites which would be geographically at the centre of the capital, for the river at its heart curves at a wide radius around it, and which would afford a new architectural value to all the great buildings upon the slopes of the City and the Strand in a grand panorama." Prof. Pite does not forget to mention the efforts of the London Society in studying the possibilities of the site, but he adds that the pressing importance of creating sites for the national memorials now gives a fresh importance to this proposal. "Upon economical grounds, it may be claimed that no other such area at the heart of the Empire can be procured; in the artistic aspect that the river, with its opposite embankment and buildings, provides already half the picture and a magnificence of lay-out that is unparalleled; and in the cause of Imperial sentiment it may be asserted that the union of sea and land and the conjunction between the centres of government throughout the extent of the capital will be expressed upon such a continuous site from London Bridge to Westminster." We believe that there are great possibilities in these suggestions, and we hope that Prof. Pite will amplify them.

Director-General of Government Housing.

SIR JAMES CARMICHAEL, K.B.E., has been appointed by the President of the Local Government Board as Director-General of Housing in England and Wales. He will be in charge of the Departmental organisations set up for the purpose of carrying out the Government policy of affording assistance, financial and technical, to Local Authorities and others, for the provision of houses for the working classes. The central staff at Whitehall, under Sir James Carmichael, has been strengthened by the appointment of various experts in building. District Housing Commissioners, we understand, are being appointed under Sir James Carmichael's direction, to assist the Local Authorities in the preparation of their schemes and the carrying of them into effect. It is expected that in some districts building will be commenced very soon.



From the "American Architect."

Free Hospital for Women, Brookline, Mass: Laundry Building.

MESSRS. COOLIDGE & CARLSON, ARCHITECTS.

GENERAL NEWS.

Model Cottages for the L.G.B.

The model cottages to be erected for the Local Government Board will probably be erected on the Tabard-street site.

Parlour Cottages.

The Woking Council, having decided to erect cottages of the scullery-kitchen and living-room type, the women, it is stated, are protesting and demand parlour cottages at a rent not exceeding 10s.

Australia's New Capital.

Reuter's Melbourne correspondent states that the Commonwealth Government has decided not to reopen at present the question of designs for the Parliamentary and other buildings of Canberra, the projected capital of Australia.

Export of Bricks, &c., from the Netherlands.

The Board of Trade are in receipt, through the Foreign Office, of telegraphic information from H.M. Chargé d'Affaires at the Hague, to the effect that the exportation of the undermentioned articles from the Netherlands has been prohibited as from January 17:—Bricks, lime, sandstone, calc-sinter bricks, roof tiles, firebricks, baked sewer tiles, and firestone.

The British Museum.

Sir Lazarus Fletcher, F.R.S., will retire on March 3, under the operation of the age rule, from the Directorship of the Natural History Departments of the British Museum, which he has held since 1909.

The Phigaleian and Terra Cotta Rooms of the Department of Greek and Roman Antiquities at the British Museum have been reopened to the public.

Prices for Tapestry.

Tapestry, porcelain and decorative objects from various sources sold for high prices at Christie's recently. Five panels of late 17th or early 18th century English tapestry, probably Soho, signed M. Mazarind, woven with Chinese figures and landscapes in colours on blue and brown grounds, were secured at 4,500 guineas. A panel of Mortlake tapestry, 17th century, woven with amorini on the banks of a stream, sold for 250 guineas, and 600 guineas were paid for a set of four panels of Flemish tapestry, early 16th century. Four Aubusson panels, woven with classical figures in landscapes, 800 guineas; a Flemish oblong panel, 16th century, 700 guineas; and a Brussels oblong panel, with Apollo and the Muses, signed by F. V. D. Borght, 880 guineas.

Recommendations to Inspectors of Reinforced Concrete Works.

We have received a little pocket pamphlet bearing this title just issued by the Concrete Institute, which is designed to draw the attention of clerks of works and others responsible, to the necessary supervisory duties in connection with the erection of reinforced concrete structures. The construction of beams and pillars is very briefly explained, as are one or two leading terms, such as "factor of safety," "neutral axis" and "lever arm." Short numbered paragraphs, giving directions for dealing with formwork, reinforcement, mixing and placing concrete, and finally testing are then given, in all some sixty hints drawing attention to points requiring supervision. These form a useful collection of matters of importance while not embracing anything with which a good foreman should not be already acquainted. As an epitome and guide to the novice, this publication, albeit of a very slight character, should prove useful.

The National Gallery.

The King has most generously lent to the National Gallery his panel by Pesellino, representing St. James and St. Mammes, from Buckingham Palace. This panel, acquired by H.R.H. Prince Albert, in 1846, has in recent years been recognised as a portion of an altarpiece by the Florentine master Pesellino, which was cut up, about a century ago, into five pieces. The centre piece was bought by the National Gallery in 1863; and two other pieces were added to it last year, one by a bequest from the Countess Brownlow, and the other by purchase. The fourth piece has been lost. The loan by the King of the fifth portion will enable the trustees to re-unite all the extant parts of the altarpiece. This will be a process requiring time and care, but while the necessary arrangements are being made the King's panel will be temporarily exhibited at the Gallery next the companion panels from which it has so long been separated.

Paris Fortifications.

Agreement upon the opposing views held by the military authorities and the Municipal Council in regard to the Paris fortifications has been reached, and a project of long standing will shortly be realised. The old fortifications around the city are to be demolished, the moats filled in, and the huge walls razed to the ground. In their place parks and playgrounds will be laid out. In addition, the present serious condition of the housing problem will be improved by the building of workmen's dwellings upon the "garden city" principle on each side of the main arteries of Paris, which are to be extended to the outskirts of the suburbs. The space allotted for this object is about one-eighth of the total available. The area to be levelled amounts to 478 acres, and the necessary work should allow all unemployed labour to have an outlet for some considerable time to come.—*Times.*

Road Transport Control.

The National Council of the Commercial Motor Users' Association (Incorporated) has unanimously adopted the following resolution in respect of the contemplated Ministry of Ways and Communications which it is proposed to place under the control of Sir Eric Geddes as Minister:—"The National Council of the Commercial Motor Users' Association (Incorporated), having considered the proposal to place the control of (*a*) roads and road transport and (*b*) railways under the same Ministry, is of opinion, the interests concerned being seldom identical and sometime conflicting, that housing and other national reconstruction programmes, and developments of industrial and agricultural road transportation, are likely to be retarded unless such control be entrusted to distinct and separate Ministries, or guarantees of like effectiveness be provided by the Government in any new Departmental organisation."

R.I.B.A. Sessional Meetings.

The following arrangements have been made for future meetings of the Institute:—

February 17.—Paper by Mr. Herbert T. Buckland: "Factory Buildings, with special reference to the Welfare of the Worker."

March 3.—Business Meeting and Election of Royal Gold Medallist; the Revised Scale of Professional Charges.

March 10.—General discussion on Professional Problems of the moment.

March 17.—Paper by Sir Frank Baines, C.B.E.: "War Factories and Sheds: their Construction and Adaptation to Future Needs."

March 31.—Paper by Captain Rimmer, A.M.Inst.C.E., Barrister-at-Law: "Legal Difficulties in the Administration of Building Contracts."

April 14.—Paper by Major Edward P. Warren: "An Architect's War Experiences in France and the Balkans."

May 5.—Annual General Meeting.

May 19.—Paper by Mr. H. Van Buren Magonigle (of New York) on "American Railway Stations."

June 2.—Business Meeting.

June 23.—Presentation of Royal Gold Medal.

Labour and the Ravages of War.

Mr. J. R. Clynes, President of the General Confederation of Trade Unions, at the American Luncheon Club at the Savoy Hotel, recently said he would like to urge upon the working-class mind the wisdom of not wasting the good that can come from the victory we had secured, and the wisdom of continuing the national unity of effort until at least the main ravages of war had been repaired and until we had caught up with the enormous arrears of work waiting to be done and completed. Much of the sane experienced leadership of the labour movement of this country had during the last two years to be surrendered and new and untried men had appeared whose remedy of any grievance was that of employers before the war—the remedy of force. One mistake on the part of employers was the failure to recognise the change in the outlook of a very large number of workmen and leaders of those men, who wanted to have a share in the amenities of civilisation and were not content to have the door shut upon them. He urged that employers and workmen should come together in a Parliament of Industry, and should combine in a common desire for the good of all.

St. Paul's Ecclesiological Society.

From the fortieth Annual Report for 1918–19 of this Society we take the following:—"The Council, in presenting its report, congratulates the members on having carried on in the face of the difficulties of darkness and war. During the year one hon. member and six new members have been elected, while the Society has lost four members by death or resignation, making the total number of members 265 on the register. The Council is endeavouring to expand the interest and work of the Society, and members are requested to co-operate in increasing the membership. . . . The Council wishes to express its deep regret at the death of Edwin Freshfield, Esq., LL.D., F.S.A., a vice-president, a contributor to the *Transactions*, and one of the original members who joined the Society in 1879; of the Rev. Canon H. Scott Holland, D.D., a vice-president; and also of A. G. Dorman, Esq., who has been killed in action." General meetings of the Society will be held at the Chapter House, St. Paul's, E.C., when lectures will be given on the following Wednesday evenings:—February 5, at 6 p.m., "Stained Glass" (illustrated with drawings, &c.), by Mr. R. C. Bayne; February 19, at 8 p.m., "The Chancel and Altar in England," by Mr. F. C. Eeles, F.R.Hist.S.; March 12, at 8 p.m., "Greensted Church, Essex," by Mr. G. J. B. Fox (illustrated with lantern slides).

MEETINGS.

FRIDAY, *February* 7.

Glasgow Technical College Architectural Craftsmen's Society.—Messrs. J. S. Boyd and J. Muir on "The Building Problems of the Future." 8 p.m.

TUESDAY, *February* 11.

The Incorporated Institute of British Decorators.—Mr. Arthur Wilcock, F.I.B.D., on "Shop Fronts." 6.30 p.m.

The Institution of Civil Engineers.—(1) The Hon. R. Clive Parsons, M.A., on "Centrifugal Pumps for Dealing with Liquids containing Solid, Gibson's and Erosive Matters." (2) Mr. F. J. Mallett, A.M.I.C.E., on "The Flow of Water in Pipes and Pressure Tunnels." (3) Mr. A. A. Barnes, A.M.I.C.E., on "Discharge of Large Cast-iron Pipe-lines in Relation to their Age." 5.30 p.m.

WEDNESDAY, *February* 12.

L.C.C. School of Building, Ferndale-road, Clapham, S.W. 4.—Professor Beresford Pite, M.A., F.R.I.B.A., on "The History of Renaissance Architecture in Italy. France and England." VI. 7.30 p.m.

The Royal Society of Arts.—Sir Frank Heath, K.C.B., on "The Government and the Organization of Scientific Research." 4.30 p.m.

CORRESPONDENCE.

Condensation on Concrete Walls.

SIR,—Referring to correspondence in the *Builder*, and to statements in papers read at meetings relative to condensation, I lived in three concrete houses together over twenty years, and no condensation took place at any time in either, after six months had elapsed from completion. The walls were solid, of monolithic construction, and 9 ins. in thickness, and the aggregate, respectively, slag, river gravel and crushed flints.

Engravings attached to the walls and other contents showed no signs of the effects of damp at the end of the period. I have just now inquired of the occupier of another concrete house built in a similar manner, and he replied: "I have lived in this house thirty years, with fires very occasionally in the bed rooms, and on no occasion have I seen any damp, and the walls are quite dry." It is a mistake to assume that concrete is of a colder nature t an brick; it is the reverse. Official trials in the United States proved that concrete houses averaged from five to ten degrees higher temperature than brick houses of a similar description, and this has been my experience.

THOMAS POTTER.

Croydon.

Plans of a "Model" House.

SIR,—I bought to-day a copy of the *Daily Express* in order to see the ground plan of Mr Pemberton Billing's model house, and was not surprised to find that it illustrated almost as many faults as it was possible to produce in the arrangement of the accommodation provided for. I will only describe two of the least, as my purpose is not to discourage a commendable effort, but rather to suggest a better way of providing what is required. The two faults are:—First, the mixing up of the coals with the cycles; second, arranging the copper in the worst position in the wash-house. Would any architect make the first mistake? or make the entrance to a cycle shed so that it would be most inconvenient for putting in or taking out a cycle? I should design to keep the cycle free from coal dust and to make the entrance at the end of the shed so that a cycle might be stored direct without turning. Or would an architect place the copper in the corner of the wash-house furthest from the bathroom and sink? These are small matters and easily rectified, but they show the risks run by those who will adopt the too common pr ctice—which seems to be recommended by some newspapers—of entrusting the providing of remedies for felt wants to those whose business is not connected with the matters to be dealt with and who have had little or no training to fit them to advise.

There are more serious faults I would like to call attention to in the plan referred to, but I do not want to prolong this letter. Possibly other views will be expressed.

S. E. TOMKINS.

Newport, Isle of Wight.

[*** Although we agree with the criticism of our correspondent, we at first doubted the wisdom of printing his letter, as there is no apparent reason why a plan prepared by a member of Parliament *qua* M.P. should be considered of any importance on such a subject. But the public are not discriminating in these matters, and appear to think that anyone can plan a house, and it is well to disabuse their minds from time to time.—ED.]

Putting Property into a State of Repair.

SIR,—Many complaints are being made at the slowness of demobilization; but it seems to arise from a desire to get rid of the shackles than from the need of the labour. For business and professional men, teachers, &c., nothing can be said; but for the great mass of men in the Army, added to those already at home, there does not appear to be much prospect of employment for the next six months or more, unless something is done to quicken up the work that is going to be done. Take my own experience—I am connected with a joinery manufacturer's business. We are just about completing our direct contracts; and as yet no move seems to be made with any housing contracts, due, no doubt, to the unstable state of the markets, both in labour and materials. But nearly all our old employees are requesting us to apply for their release, which we are doing, in the hopes of having work for them. But if their release is speedy, as per popular demand, it will create a difficult position.

To save the position, work should be put in hand to-day. The most obvious work at the moment is repairs, which have been much neglected. It is admitted that, owing to the Rent Restriction Act, &c., property owners cannot put much work in hand at to-day's prices when rents are based upon past values. Therefore I suggest now that the excuse of shortage of labour, &c., does not exist, that an Order be made that all property be put into a good state of repair, and that all earth closets be converted into water carriage system, which, if done during the next six months, the State would bear half (?) of the cost. This could be worked through the Local Authorities, who would certify all necessary repairs and check cost of same.

Some would raise an objection to this, saying this is a "dole" to property owners, &c.

I am not an owner; I am an humble joiner (foreman), paying weekly rent, and make these suggestions for the following reasons:—

1. It would gradually start the building trades in operation and find employment with less demand for materials, than would new buildings.

2. It world instantly remove some of the uncertainty that is hanging over everything. Property owners who failed to take advantage of this subsidy within the prescribed period would have to bear the whole cost, as the labour and materials will be needed for new housing, &c.

3. The cost to the State would be spent to better effect than through the Labour Exchanges doles, and would act as a lubricant to set the wheels of peace time trades in motion again. Owners would get the repairs done at about pre-war costs.

4. This could be put into operation within one month, or until the larger schemes can be put into operation and the bricks, &c., are being made; and would employ practically all the allied building trades.

MAURICE CODLING.

The Staff for R.E. Services.

SIR,—As you are probably well aware, the S.R.E.S.—mostly comprised of architects and surveyors—has always been particularly unfairly treated, both before and during the war. At the end of the war the vexed question of promotions on the staff will probably be allowed to sink into oblivion, as the majority of its members are on the Temporary list. It is unfortunate, however, that the authorities do not seem capable of dealing fairly with the staff in any single particular; it seems incomprehensible that an officer who has worked for over four years *by the side of an R.E. of equal rank and on the same work* should

Not be eligible for the same children's allowances.

Not be eligible for promotion beyond the rank of Captain without being transferred to another branch of the Service!

Not be eligible for the War Gratuity.

Not receive the same income.

That the S.R.E.S. is not entitled to the gratuity while the A.S.C., A.O.D., R.E., &c., all *are* is a grievance which it is hoped the War Department will be able to remove. In this connection it should be pointed out that whereas the majority of R.E. and other departmental officers have had to be especially trained at the Government's expense, the members of the S.R.E.S. have been almost entirely employed on work for which their pre-war professional training (of at least 10, and in most cases 20, years) was particularly well suited. For some reason or other this is always blandly ignored. It should be taken seriously into account; the Temporary Inspectors of Works should at least have the right to be considered as specially enlisted technical officers.

It should also be borne in mind that although the gratuity is in the nature of a concession, it is paid out of public money, and its distribution should be made with fairness among all who have earned it.

A.R.I.B.A.

Beddingt n House, B ddington.

SIR,—We enclose copy of letter written to the Secretary of the Surveyors' Institution, together with the copy of letter therein referred. You were good enough to publish a short letter from us on the matter some time back.

ROBINSON & ROODS.

The Secretary,
Defence of the Realm,
Losses Commission,
Spencer House,
27, St. James-street, S.W.

BEDDINGTON HOUSE, BEDDINGTON.

Dear Sir,—We should be glad if you would bring before the Commission, in order to prove to them the erroneous conclusion at which they arrived in connection with the above case, the fact that the Inland Revenue authorities have just sent us an application for income tax based on an assessment of £424 8s., duty payable £61 15s., with I.H.D. at 9d. in the £, based on assessment of £430, amounting to £16 2s. 6d., or a total application for £77 17s. 6d., in connection with the property which the Government took over and awarded our clients the large sum of £25 per annum!

We have referred the Collector of Taxes to you, and any charges our clients will have to pay must be discharged by the Government.

(Signed) ROBINSON & ROODS.

January 6, 1919.

A. Goddard, Esq.,
The Surveyors' Institution,
12, Great George-street, S.W. 1.

BEDDINGTON HOUSE, BEDDINGTON.

Dear Sir,—The military authorities took possession of the above property, for which Mr. Robinson was Receiver. It was brought to the notice of the military authorities by Croydon agents, who asked £400 per annum for the property.

After considerable correspondence with the Lands Branch, &c., the usual forms were filled up for an application to the Defence of the Realm, Losses Commission, and a hearing was given to our clients about a year after possession had been taken. We eventually received notice from the authorities that the Commission had awarded our clients £25 per annum for the use of the large premises which, as you will see from the enclosed copy of letter, were rated at £400, and an allowance for expenses for preparing the case of £3 3s.

With regard to the latter allowance, we had the Estate Solicitor in attendance, the local firm of auctioneers who gave evidence, and we attended and gave evidence ourselves. The correspondence in the matter had been very lengthy.

We feel that this case is only similar to many others, and we should be glad to hear what action the Institution has taken in the past in connection with similar cases.

(Signed) ROBINSON & ROODS.

London of the Future.

A contract has been signed on behalf of the London Society with Mr. T. Fisher Unwin for the publication of a book dealing with London of the future. Lord Plymouth will write the foreword; and its twelve chapters, by different authors will be produced under the editorship of Sir Aston Webb.

OBSERVATIONS AND SUGGESTIONS.—I.

NEW MEMORIAL BUILDINGS AND FUTURE REPAIRS.

By W. R. Lethaby.

In the series of notes which I hope to contribute monthly to the *Builder* during the present year I propose to deal with a few questions, practical, theoretical, or even historical, without working to any pre-arranged scheme. And first of all I should like to say some few words on the immediately important matter of Memorial Buildings. It would be sad that what, in the aggregate, will be very large sums of money should be unwisely spent; and yet how can the people spend wisely if they are not merely unguided, but often most actively misguided? This seems to me a time when the architectural societies, which should function as guilds, should be ready with suggestions and directions. It is a time, too, when the technical Press may be of very great help in what is really a matter of urgency—even national urgency. And, further, it seems to me that a standing committee for the things of civilisation should be constituted in every town, a local Civic Arts association. Architects everywhere ought to be the first to move in these matters, for it is their business to, but if they don't, we must appeal to all men of goodwill.

The other day I was asked, "in a friendly way," what I thought of a village hall as a possible war memorial. I replied to the effect that such a hall or something socially useful was probably the best form a memorial could take, for the living people are starved for lack of the means of civilisation. In promoting such a scheme the true need is to build something sound and lasting. Committees start with vaguely ambitious notions and may easily be misled by vaguely "artistic" plans, the results of which are sadly disappointing time after time, and yet nobody seems to learn. I recall a "Jubilee Memorial Hall" in a village I know, which obviously was very cleverly designed on paper, but now it is shabby and run down, with gates off the hinges, and all the "picturesquenesses" (vile word) have become snares and weather traps. Building committees, and architects, too, get misled by paper plans and forget that buildings have to be repaired and kept in order, beginning from the day on which the builder gets his "final certificate." The great—almost insurmountable—difficulty is that "a design" for what would be a sound and common-sense building looks bald, tame, and what any committee would think impossibly "ugly" on paper. Are they to spend their memorial money on a mere barn like that? It is a difficulty in the very nature of the way in which modern work is done, and we need all the help that may be had from societies, the Press and individuals, to make known the fact that paper is likely to let the wet and cold in.

I cannot with all the repetition impress it enough on all who are concerned in building memorials of any sort to remember, or rather anticipate the surely coming repairs. Build for endurance—a shoddy building is a memorial the other way about. Build modestly, but extravagantly well; try to make the sanest, soundest, solidest building in the county. We must not put up thousands of structures all over the land which will, by more than a very minimum of inevitableness, entail a vast annual charge for repairs. Memorials at least must, in Wren's phrase, be "built for eternity"; or certainly, in these rapid days, for a dozen years.

Think how delightful it might be, if only it might be, to come unexpectedly to a queer-looking building that seemed made for use, all compact and finished and cared for, and clean as a pin: an affectionate looking sort of building, not brazen and bold and bedizened with a first prize beauty competition countenance. The walls might be so thick that they would really keep out the rain and conserve the heat; the roof—I hardly like to say it—but for a memorial, just for once, it might be covered with lead; the floor might be of oak boards or blocks so well laid—so very well laid—that they would not wobble and rattle. Why, it would be wonderful, and a memorial indeed—a memorial to the living as well as to the dead. Perhaps, when, in the first months of strangeness, people were too much offended at such an innovation, we might explain it and put it right by saying, "That is in the memorial style, you know; its just coming in."

Parish War Memorial, Eltham, Kent. Mr. Ernest J. Gosling, F.R.I.B.A., Architect.

[This memorial is to be erected in the churchyard, near the lich-gate, and therefore will form a prominent object. It will be built entirely of Portland stone and will have a groined roof with moulded ribs. The names of all those belonging to the parish, who have fallen in the Great War, will be cut into the building itself, rendering it a memorial for all time. The drawings have been prepared by Mr. Ernest J. Gosling, F.R.I.B.A.; Mr. Thomas Batterbury, Eltham, acting as advisory architect to the Committee.]

MR. H. T. HARE, F.R.I.B.A., presided on Monday over a general meeting of the Institute, held at No. 9, Conduit-street, W.

Mr. Guy Dawber (hon. sec.) announced the decease of Major William Vere, R.E., licentiate (killed in action); and of Capt. Francis Renton Barry, 5th Reserve East Surrey Regt., Associate; and a vote of condolence with the relatives was passed.

Sir Aston Webb, P.R.A.

The President moved that an address of congratulation be sent to Sir Aston Webb on his election as president of the Royal Academy. He said this was practically an unprecedented action, and it must be of great benefit to the architectural profession generally. They felt it was a great honour to them, and the Council thought it an occasion which should be marked by a special letter of congratulation.

The motion was hea til agreed to.

The Royal Gold Medallist.

The Preside t said he had also to announce that the Council proposed to submit to His Majesty the name of Mr. Leonard Stokes as a fit recipient of the Royal Gold Medal for the current year, in recognition of the merit of his work as an architect. The work of Mr. Stokes had been prominent, and they always looked forward to seeing it; and it was gratifying to notice that some of his latest work was probably the best he had ever done.

How to Obtain a Water Supply in the Absence of Springs, Rivers and Rain.

Mr. Geo. Hubbard, F.R.I.B.A., in the course of a paper on this subject said that in consideration of a water supply in the absence of all rivers springs and rain, it must be realised that every drop of water which fell to the earth came from the air. The air was composed of certain gases and aqueous vapour, and this was always being given off by evaporation from any surface of water, or from ice, until the atmosphere became saturated with it. The point of saturation, or the dew point, represented the state of the atmosphere when it could not contain any additional moisture or aqueous vapour at a given temperature. The higher the temperature of the air the more aqueous vapour it was capable of containing. The state of saturation was made known when the dry and wet thermometers recorded the same temperature. It was obvious that if the temperature of saturated atmosphere was lowered below the dew point then the moisture it could not contain at such lower temperature must be deposited, and this deposition of aqueous vapour sometimes formed dew, or it might fall as rain or remain suspended in the air as mist. If the temperature of the atmosphere was again raised without any chance of its coming in contact with any form of moisture, then the atmosphere was comparatively dry, and evaporation from any moist surface was rapid.

The portion of the earth receiving the sun's rays during the day was absorbing a certain amount of heat. Generally speaking, one half of the heat of the sun received by the illuminated atmosphere was absorbed by the air, leaving the other half to reach the surface of the ground, provided there were no intercepting clouds. This process of absorption of the heat of the sun during the day was reversed during the night. For the present purpose it might be assumed that the heat received either by the atmosphere or by any portion of the surface of the earth during the day was radiated during the night into space. Thus the atmosphere which was warmed during the day was capable of containing a greater percentage of aqueous vapour than it could retain if it was chilled below dew point during the night.

Provided a chilled surface could be produced which would lower the surrounding temperature of the atmosphere below dew point, the aqueous vapour would be condensed on the chilled surface. Radiation lowered the temperature, and so did evaporation, and when these two forces were both in action a very considerable fall was reached in the temperature of the radiating and evaporating body. As a concrete example of this there was the well-known method adopted in India of procuring ice. By the application of simple automatic conditions definite results might be obtained which might some day prove to be of great importance to humanity. In certain countries where there were neither rivers nor springs, and where the rain seldom or never fell, the conditions appeared to render such localities unsuitable for man or beast, yet by the application of scientific principles a consistent water supply would be obtained if it was possible to lower the temperature of the air below the dew point.

The lecturer proceeded to suggest that this might, on the evidence of a number of facts, be instanced in connection mainly with dew ponds, and said he believed his brother and himself were the first to show that the dew ponds furnished the principal water supply to those prehistoric races who lived on the hill tops on the South Downs thousands of years ago. On the higher parts of the downs and sometimes on the very summit such ponds could be seen. From time immemorial a certain definite form of construction seemed to have been adopted. Operations were commenced by hollowing out the earth for a space far in excess of the apparent requirements of the proposed pond. The whole of the hollow was then thickly covered with a coating of dry straw. The straw, in its turn was covered by a layer of well chosen, finely puddled clay, and the upper surface of the clay was closely strewn with stones. If such a structure was situated on the summit of a down during the warmth of a summer's day, the earth would have stored a considerable amount of heat, while the pond, protected from the heat by the non-conductivity of the straw, was at the same time chilled by the process of evaporation from the puddled clay. The consequence was that during the night the moisture of the comparatively warm air was condensed on the surface of the cold clay. Owing to the chilling effect of evaporation from this thermally isolated surface the condensation during the night was in excess of the evaporation during the day, and the pond became, night by night, gradually filled. The dew pond would cease to attract the dew if the layer of straw should get wet, as it then became of the same temperature as the surrounding earth, and ceased to act as a non-conductor of heat.

A thick layer of straw was a very good non-conductor, and its efficiency lay in the fact that the cellular formation of the straw contained still air. Experiments made by his brother and himself resulted in striking effects when they used mica as the non-conductor. They made wooden trays two feet square, and painted them various colours. They also prepared square slabs constructed from waste mica two feet square and two inches thick. When they placed any one of their trays upon such a slab of mica, on the same night and side by side, other trays not on mica slabs, the result was that they generally obtained, during the night, twice as much water in the tray placed on the mica as they obtained on the other trays. The experiments were carried out on a gravel path, where no sign of condensation appeared. The wood with which the trays were constructed was in itself a good non-conductor of heat, and it was owing to this fact that the trays placed directly on the gravel gained some moisture.

There appeared to be no difficulty in obtaining water at high altitudes, but in order to test the possibility of obtaining water at a very low level they carried out an experiment on a large scale. In a flat meadow in Kent, on perhaps the lowest lying land in the district, they constructed a dew pond. They began by excavating the earth to a depth of 18 in. over an area of 100 sq. ft., the superficial area of the pond being 10,000 ft. They laid a bed of 4 in. of cement concrete and, in order to check any moisture rising into the pond from below, they thickly coated the surface of the concrete with pitch. Then they had mica slabs made, 2 ft. square and 2 in. thick, and the surface of the pitch was spread over with fine sand, to make a suitable bed for the mica slabs. The slabs were then put down in regular order, leaving perhaps an inch space between each slab. In order to keep them dry and preserve their heat non-conducting property, the whole surface of the pond was covered with ¾ in. of asphalte. The asphalte ran into spaces between the slabs, but when it was completed it presented an even black appearance over the 10,000 ft. area of the pond. When the pond was completed, and he went to see it in the morning, it looked like a great chess board with some 2,500 perfect white squares, all ruled off regularly by hard pitch black lines about 1 in. wide. Immediately above each mica square, tall white hoar frost was standing. In the course of a few hours the sun melted the hoar frost, and they had obtained hundreds, if not thousands, of gallons of water, which lay in great pools on the surface of the pond.

To obtain the best possible result from a dew pond there were three essential points to be fulfilled, viz.:—(1) The site should be on high ground facing the moisture-laden winds; (2) the substructure of the pond should be made of the most suitable and efficient non-conducting heat material, such as straw; and (3) the superstructure of the pond should be composed of the most suitable heat-conducting material, so that the heat acquired during the day may be radiated as quickly as possible after sunset.

Mr. Hubbard suggested that there was a chance of converting some of the desert earths into fertile land by the adoption of some form of dew pond or condensing surface aided by the growth of trees. He instanced the Desert Islands as a locality admirably adapted for the construction of dew ponds. The water obtained would, in the first instance, have to be used for rearing trees, for in any scheme for providing water in waterless lands, trees must eventually play an important part. Though there was the keenest competition between tree and tree in the forest they did in fact co-operate together in bringing about such a general chilling of the air as would result in inducing rain to fall. That water would some day be produced he had no doubt, and the result in the end might be that, in other lands than ours, the words of Kipling might yet be sung—

"We have no water to delight our broad and brookless vales.
Only the dew pond on the height,
Unfed, that never fails.

On the motion of Mr. Paul Waterhouse, seconded by Mr. J. W. Simpson, a hearty vote of thanks was accorded to the lecturer.

The President said it was a pity that some large body did not put the experiences of Mr. Hubbard to practical use.

It was announced that the next meeting will be held on Monday, February 17, when Mr. Herbert T. Buckland will read a paper on "Factory Buildings: with Special Reference to the Welfare of the Worker."

Rebuilding Belgium.

The *Daily Express* understands that Sir Frank Baines, principal architect to H.M. Office of Works, now awaits the consent of the Inter-Allied Committee for the disclosure of his scheme for the reconstruction of Belgium.

THE TOWN PLANNING INSTITUTE.

REPORT OF THE ROAD BOARD.

PROFESSOR S. D. ADSHEAD presided over a well-attended meeting of the Town Planning Institute held at the Surveyors' Institution on January 17 to discuss the report of the Road Board on the proposed Western Avenue and North Circular Road.

Mr. W. Rees Jeffreys opened the discussion, and said that now he was no longer the secretary of the Road Board he could discuss the report with a sense of greater freedom and less responsibility. Proceeding to survey the position which led to the publication of the reports of the Board, he said that the question of London traffic had been an important topic for the last thirty years, and in 1913 the Government appointed a Royal Commission to consider the subject. Never did a mountain of labour produce so small a mouse, for all that resulted was the appointment of a traffic branch of the Board of Trade, which was swept away after the war commenced. The next development to deal, to some extent, with London traffic was the establishment of the Road Board in 1909, and the Board had, in co-operation with the Middlesex County Council, provided, in the Brentford by-pass road, one of the many traffic facilities required by London. In 1909, the Town Planning Act was also passed, and many of them hoped that the machinery of that Act would be used to provide arterial roads. Up to the present, only six town planning schemes by five local authorities had been sanctioned by the Local Government Board in England, and but one of these—the Ruislip-Northwood scheme—was in the London area, and this did not deal with arterial roads. As the result of pressure brought to bear on the Local Government Board in 1913 a conference of local authorities in Greater London, known as the Arterial Road Conference, was called together, and afterwards presented a report. This was submitted by the Local Government Board to the Road Board, and the latter body had now reported on two of the schemes proposed, which were the subject for the discussion that night. He only proposed to deal with the Western Avenue. The Board, in its conclusions, said:—"The rapid development of the country enclosed between the Oxford and Harrow Roads, within 15 miles of the Marble Arch, and the certainty of a still more rapid development after the war, suggests the need for a general plan, fixing the location of all first, and some second, class roads which could with advantage be provided, and providing for widenings and improvements of existing first and second class roads. Among the new roads which could with advantage be provided is one running east and west, roughly midway between the Harrow and Oxford Roads—the Western Avenue of the Conference proposals." What he asked the meeting to discuss was whether it was possible, under existing machinery, to get that road built, and if so, whether it was possible to set that machinery at work. If it could be provided under the existing machinery, there were three bodies who had to work energetically together to get it done, viz., the Local Authorities with whom the initiative lay, the Local Government Board which was the responsible authority for the Town Planning Act, and the Road Board, which was the only authority with funds for work of this character, other than the highway authorities, who derived their funds from the rates. Finance was the crux of the whole question, and it was folly to blink that fact. The only authority which had any money to spend on roads at the present time was the Road Board, but it had no money to spend on work of this character. It had to find money for repairing the crusts of existing roads, and could not pay for the building of a new road of that kind. Under the Town Planning Act machinery, it was possible for the line of road to be preserved without the cost of construction being immediately undertaken, and he asked the meeting if it considered it was possible for the line of road to be set out, and the land secured with the resources they now had. The line of the Western Avenue was fairly open, but building development, in a few years, might block it altogether. What he thought the Road Board might do was to stand behind the Local Authorities and guarantee them against the unknown in the matter of expenditure. For instance, on the line of route, there was the Greenford Local Authority, and it happened that, in this particular district, some of the most expensive works in the construction of the road would have to be done, as the railway, river and canal would have to be crossed. It was not to be expected that such an authority would commit itself to anything which would mean an enormous increase in the rates. Under the machinery of the Town Planning Act the Local Authority could lay down the line of route, and it might be called upon to pay compensation after the scheme was approved. It was this element of the unknown as to what compensation might have to be paid which had been the greatest check in the development of town planning schemes, and especially with respect to big road schemes. It seemed to him that the Road Board might stand behind the authorities and guarantee them against the unknown. Personally, he did not think the claim for compensation would amount to much, and it was also to be remembered that the principal of betterment was provided for under the Act. When once the line of route was laid down, he thought they would be surprised at the way building would develop along the road. It would not be long before they got a patchwork road, and then when money was again available, the connecting links could be added. He had dealt with the Western Avenue because, for a number of reasons it was the most practical scheme to deal with under existing machinery, and if such machinery did not provide for it he did not know of any scheme of the kind which could be so carried out. He had been dealing with the complicated case of a dock and riverside area, and was appalled at the problem. It was obvious that machinery which did not now exist would have to be provided for securing the development of such an area. He hoped, however, the meeting that night would deal with the Western Avenue in a practical manner, to see whether it was possible to proceed with the road under existing machinery.

Alderman Regester (Chairman, Middlesex County Council) agreed with the opener as to the importance of the road, which would have to be made some day whatever the cost might be. The citizens of Middlesex were not intimately concerned in the new road, as it would be simply a conduit for the traffic to and from London. If only the officialism of the past could be abolished and a number of business men could meet together in a room and discuss the whole thing he felt that something might be done.

Mr. W. R. Davidge said the last report of the Road Board was encouraging, in that it showed the Board was changing its character. There was a human touch about the report, and sympathy was expressed with the Local Authorities. The Board had said it would put by £5,000 for investigating the engineering possibilities of the scheme, and that had been done; and if that £5,000 was devoted to assisting the Local Authorities concerned in preparing town planning schemes it would encourage them to go on. There could be no doubt that it was the duty of the Local Authorities concerned to see if the Western Avenue could be carried out under existing machinery, but it was equally clear that a large authority would have to be constituted for dealing with other cases, such as the dock and riverside area that had been referred to. He therefore supported the suggestion that the Local Authorities should come together and try and preserve the line of route, and in the meantime the scheme for a larger authority should be pushed forward by every means in their power.

Mr. E. R. Abbott pointed out how in the preparation of the Ruislip-Northwood scheme his authority was exceedingly anxious to sterilize land for an arterial road, but no assistance could be obtained from any central authority, and in the end they had to abandon this portion of the scheme. He believed the compensation which the authority would ultimately be called upon to pay, if the land required for the road was sterilized, would not be much. Owners of large estates, particularly in agricultural districts, would welcome such roads, and would give the land, and it was only here and there that a small owner would be left with an awkward corner, which might fairly form the subject of compensation. He might mention that at Ruislip-Northwood, they had secured £1,500 for betterment, and hoped to get as much more. He suggested that Mr. Alderman Regester should call a conference of the Local Authorities concerned, for if they could get the land, then it would be possible for them to approach the London County Council and ask that body for assistance.

Alderman Regester said he would like to know first whether the Road Board was likely to favour the suggestion of Mr. Rees Jeffreys that it should guarantee the unknown.

Mr. J. Gunton (City Corporation) said in discussions of this kind they were bound to come back to the question of money, and it seemed to him unless there was some Imperial authority which could assist them with funds nothing would be done.

Mr. G. L. Pepler said it was open for the Local Authorities to meet together and they could prepare schemes in conjunction with one another. They could meet the landowners and find out what compensation was likely to be involved. He imagined that they would then say either to the Road Board or the Government, "We have met and put our heads together and worked out our schemes and incorporated this road. It involves compensation which we are not prepared to pay. We have done all that is possible under existing powers, and it is for you to step in to see that the thing is carried through and guarantee us against these other things." Until they had done that it was open for the central authorities to say, "First show us what you are prepared to do and then we will say what we are prepared to do."

Mr. F. M. Elgood suggested that the first thing was for the Road Board to say what it would do and then for the Local Authorities to meet together. If the Road Board would drop some of its officialism and deal with the matter like men of common sense, and try to help the Local Authorities, then the Local Authorities would do their share.

Mr. E. Willis (Chiswick) considered the provision of arterial roads an Imperial matter. In the scheme of his authority the provision of arterial roads had been excluded because there was no guarantee.

Colonel Hellard, C.B., strongly criticised the report of the Road Board on the proposed North-East circular road. That suggestion, he said, was put forward with the object of relieving the congestion in the central streets of London, and the report of the Road Board on it was absolutely misguided from start to finish.

Mr. Raymond Unwin, F.R.I.B.A., urged that a conference of the Local Authorities should be held as arranged and pointed out that it would be carrying the matter an important step further. What was proposed had never been done in the case of a new road, and hence a fresh position would be faced. He believed the town planning officials of the L.G.B. would look on the suggestion with sympathy.

A good deal of discussion took place regarding the calling together of a conference of Local Authorities and Alderman Regester promised that he would do this if he found that the idea was favourably received by a majority of the authorities concerned.

Two Garden Cities.

Heston and Isleworth Council propose to establish two garden cities in their area.

EXHIBITIONS OF THE WEEK

The Sennefelder Club in the Leicester Galleries. Lithographs at the Guildhall.

THE ninth exhibition of the Sennefelder Club for the advancement of artistic lithography, which has been recently opened at the Leicester Galleries, keeps up to a high level of interest and technical achievement in this branch of art, which, in richness and softness of line, can never be excelled, and—we hope—never superseded by cheaper and more commercially effective methods of the reproduction of design. The subject matter in the first room might be roughly divided into two classes.

Apart from the Whistler studies of the draped female figure (1—6), which commence the series, there are on the same wall a number of brilliant and purely realistic studies of modern life by Steinlen, Poulbot, Toulouse-Lautrec (Dihau et Judic, "La Conversation"), Forain, Veber, Degas; and these Parisians, in their studies of the boulevards, come into line with those inimitable London studies of Borough Johnson ("Aliens") and of John Copley, who, in his "Five Girls"—looking like some of our splendid land girls—and in "The Ambulance" and "Tennis Players," shews a fine perception of structural form. Under the same category might be classed the London studies of A. S. Hartrick ("The Busman," "Bus Conductor") on the next wall; but here we begin to get into quite another class of subject, namely, that which has come under the compelling interest of the recent war, commencing with Steinlen ("The Serbian Exodus").

We find here a whole group of lithographs dealing, more or less directly, with the war—Will Dyson's work with the Australians in France, Muirhead Bone's admirable scenes of great shipyards, Claude Shepperson's more symbolic "Roses of Victory," and the tragic visions by George Bellows of German ferocity in "The Germans Arrive," and "The Murder of Edith Cavell," where a white figure moves down the dark staircase where death waits below.

What can be achieved by lithography in exquisite softness of tone, is seen in the next room in the portrait by Carriere of the Parisian poet, Paul Verlaine. Technically, it is a masterpiece of this side of the lithographer's art. All melts and is diffused with a rich quality like that of old mezzotints; and the modelling of the massive brow is given by tone laid against tone. On the other hand, there is a place kept in the same art for the strong line of Schwabe's figures, for the wild fauna ("Lion and Lioness Waiting"), of Elsie Henderson, and the refined and classic feeling in C. E. Shannon's nude figures ("Sea and Breeze" and "Shell Gatherers").

At the Guildhall are now being exhibited a very interesting set of lithographs in colour, illustrating the London of his day when they were issued in 1842 by Thomas Shotter Boys. There are twenty of these in all, recently acquired by the Library Committee, and, as the inscription on the "Doorway of Temple Church"—which must have been the first of the set of "London as it is," drawn and engraved by Thomas Shotter Boys—shows; the object here was the actual presentment of London life and London streets. This is, of course, their chief attraction, though they have also the merit of clean fresh colour, and good architectural and figure drawing. We find a charming view of Buckingham Palace and the St. James's Park, Old Temple Bar, and the interior of the Guildhall itself, but lacking in its sense of mystery and age. Then Piccadilly, with the road up, Regent-street looking to the Quadrant, St. Paul's from Ludgate-hill; and in all these the costumes of the period, the dandies, the ladies in wide crinolines, give a greater sense of change than do the buildings themselves.

When that charming draughtsman, Willette, in the Leicester Galleries, depicts "La Lithographie" as a vulgar and somewhat badly drawn nude lady, who dictates her theme to an impish Cupid, he may describe the Muse of his confr res, Veber, Poulbot, Toulouse-Lautrec or Hermann Paul, but scarcely does justice to an art, which, as we have here seen, has such an infinity of subject, such a fertile variety of expression.

THE RESETTLEMENT OF OFFICERS.

No. 12 of the useful series of pamphlets on "Reconstruction Problems," which the Ministry of Reconstruction is issuing, deals with the resettlement of officers (Army and R.A.F.) and contains a clear statement of the nature of the problem involved and the machinery provided for dealing with it. Beyond calling attention to this pamphlet we need do little more than advise anyone concerned to purchase it (price 2d.), though we may add that State grants are to be given for training.

"It is recognised as a matter of urgent national importance that the losses in the supply of trained and educated men should, as far as possible, be repaired. These losses are due to three main causes—(*a*) casualties, (*b*) suspension of education, (*c*) impairment of professional efficiency. It is further regarded as a national necessity in the case of the disabled to diminish the degree of their dependence and to make them, physically and mentally, as efficient as possible. In the case of the younger men whom the experiences of the last four years will have left inadequately prepared for the work of civil life, it is considered highly important that they should be given a period of study. These main considerations govern the scheme *to provide State funds for the training and education of officers and men of educational promise.* Under this scheme it is hardly possible to lay down any definite scale of grant, as the sum is bound to vary with the individual, but the general principles are as follows:—

(*a*) The types of training contemplated comprise courses of higher education and trainin g in Universities, Colleges and other institutions, and practical training in offices and works, and professional employment and on farms. In every case the institution and the course of study must be approved by the Government Department concerned and the educational or training body must declare its readiness to admit the candidate to a course of study, and that he shows such promise as will justify, if need be, assistance from public funds.

(*b*) The annual sum granted will be assessed with a view to covering the fees for the course and the cost of maintenance during the period of training, including term-time and vacation. This sum will not, save in exceptional circumstances, exceed £175 per annum (exclusive of training fees).

(*c*) No account will be taken of any service gratuity or wound gratuity or pension, but account *will* be taken of any assistance accruing from scholarships and grants from public or voluntary funds other than those mentioned.

(*d*) Account will also be taken of the extent to which the candidate or his parents or friends who would under normal conditions have met the whole or part of the charges involved can still contribute for the purpose.

(*e*) Consideration will be given to the length of the period for which war service interrupted the candidate's career.

Westminster Abbey Windows.

Shortly after the first air raid on London it was deemed advisable to remove a number of ancient windows in Westminster Abbey to a place of safety. They were deposited in the cr pt of the Abbey, and steps are now being taken to replace them in their former positions. At the same time all the most precious bronze effigies of the Tudor Kings were removed, but these have already been replaced. The beautiful east window of St. Margaret's Church, which depicts the Crucifixion, was removed about the same time to the crypt of the Abbey, and will also be replaced shortly.

THE PROPOSED NEW ROAD BRIDGE AT CHARING CROSS.

THE *Journal* of the London Society for January deals with several interesting matters, and in the leading article consideration is given to the proposal for a new road bridge at Charing Cross as a War Memorial. In the course of the article the writer says:—

"Opinions differ as to whether the bridge should be a high-level one from the Strand or a low-level one from the Embankment. Although our South Side Committee decided almost unanimously in favour of a low-level bridge, there seems now to be a change of opinion in favour of the high-level treatment, The chief points in favour of this seem to be the success of Waterloo Bridge and the opportunity for an elevated space around which the memorial buildings could stand. On the other hand, all traffic from the Embankment would have to ascend to the Strand before it could cross the river, and there is a much wider space to cross with viaduct (about 1,000 ft.) than at Waterloo Bridge, which means dark arches that may deteriorate into storage vaults or cab ranks.

"On the South side the bridge is necessarily low level, and that is a consideration which seems to point to the same treatment on the other side if balance is to be attained. It must be remembered that trams will be advocated crossing this bridge, and if so they cannot possibly cross the Strand, whereas on a low level bridge they could connect with the present system and might secure the removal of those on Westminster Bridge, which are so out of place and detrimental to the structure. A notable feature of Mr. Collcutt's scheme is the provision of covered recesses on either side of the bridge approaches to contain statuary groups.

"There remains the question of the new station on the South side. It is thought that this bridge, if built, should form the main approach to London from Europe, and that a new station must therefore be built at its eastern end. The South Eastern Railway has always been against this, and but for this idea the scheme might have gone much further by now, but the Government decision about railways certainly brings the realisation of a comprehensive treatment of London's railways nearer than ever. When that is done the public interest will supersede that of the Companies altogether. Under the new conditions there is no point in having another large terminus opposite Waterloo. A vital factor in the reform of the railways is the separation of suburban from main line traffic. As far as possible the suburban lines should be woven into the central system, just as they have been from Watford and Finsbury Park. Daily travellers could then proceed straight to their nearest station direct. This would relieve the termini and would make it possible for them to take extra long distance traffic from other lines if necessary. Waterloo could therefore take the whole Continental traffic, and no more suitable place could be found for it, as it stands at the foot of the proposed new bridge and this bridge leads to the principal hotels and public resorts.

"This was the only thing wanted to perfect the scheme, and we feel we may now centre all our hopes and thoughts upon this grand, inspiring and epoch making plan, which not only provides an unique position for the Memorial itself, but also by knitting together both sides of the river, opens up a large new area for the expansion of our crowded administrative and business centre."

The Institution of Civil Engineers.

The Institution of Civil Engineers, at the meeting held on Tuesday last week, elected upon its roll of distinguished Honorary Members Marshal Foch, O.M., Field-Marshal Sir Douglas Haig, K.T., and Admiral Viscount Jellicoe of Scapa, G.C.B., O.M.

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ILLUSTRATIONS.

Design for Winchester College War Memorial.

THE competitive designs for the proposed addition to Winchester College have raised some controversy. We are not yet able to give Mr. Baker's accepted design, but we are glad to be able to give the design of Mr. Frank L. Pearson, whichshows a sympathetic handling of the subject, and is illustrated by some admirable drawings.

The scheme consists of a Court entered through Commoner Gate (the South African War Memorial), surrounded on three sides by an open cloister, the northern walk being specially intended as a Memorial Cloister, with three deep apsidal recesses designed to receive the names of Wykehamists fallen in the war. The other two walks have each an upper story, or gallery, that on the east to contain Wiccamica and that on the west the miniature rifle range. The latter, which is displaced from its present position by the scheme, is thus brought into convenient connection with the armoury.

Attached to the Cloister, and entered from its north-east corner, is the Memorial Hall, 104 ft. long and 51 ft. wide, with seating accommodation for 800 persons. It was proposed to be used for concerts and other gatherings too large to be accommodated in any of the present buildings. The site north of the Cloister and at the west end of the hall, was reserved for an additional chapel, the existing accommodation being insufficient for the College.

The suggestion shown in the site plan for the removal of "School" to a new position north of the new hall is not an essential feature of the scheme, but would undoubtedly have the effect of opening up a most charming view of Wykeham's buildings from "Meads," and of enabling the interesting front of the building designed by Wren to be seen to full advantage.

F. L. PEARSON.

Proposed Married Quarters for the Western Union Cable System.

THESE houses have been designed to accommodate a part of the married operating staff at the Western Union Co.'s cable station, on Valencia Island, County Kerry, Ireland. The difficulties and restrictions in connection with building materials, and the inaccessibility of the site, have very largely influenced the general arrangement.

To obviate the use of home-grown timber, the ground and first floors are in concrete, and all first floor walls are in brickwork, being immediately over those on the ground floor. The severity of the climate necessitates the use of cavity walling covered with cement rendering.

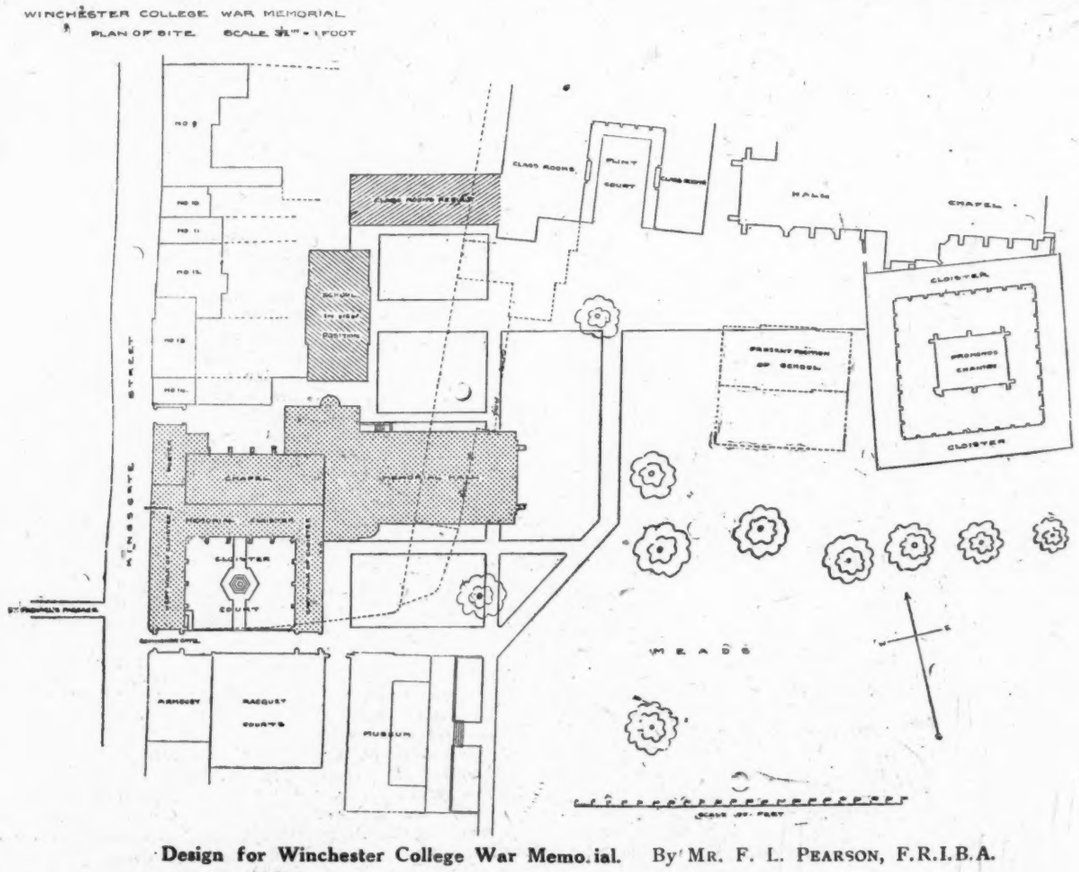
The houses are standardised throughout, as far as possible, but an effort has been made to give each house of the block a certain amount of individuality in front elevation, the lack of which is so often the objection to the "terrace" type.

Houses Nos. 9 and 10 are intended temporarily to accommodate a small number of the single staff, and will ultimately be converted into married quarters.

In execution it is proposed to provide the kitchen with sink and use the scullery only as a wash house.

COMPETITION IN TRADE MARK DESIGN.

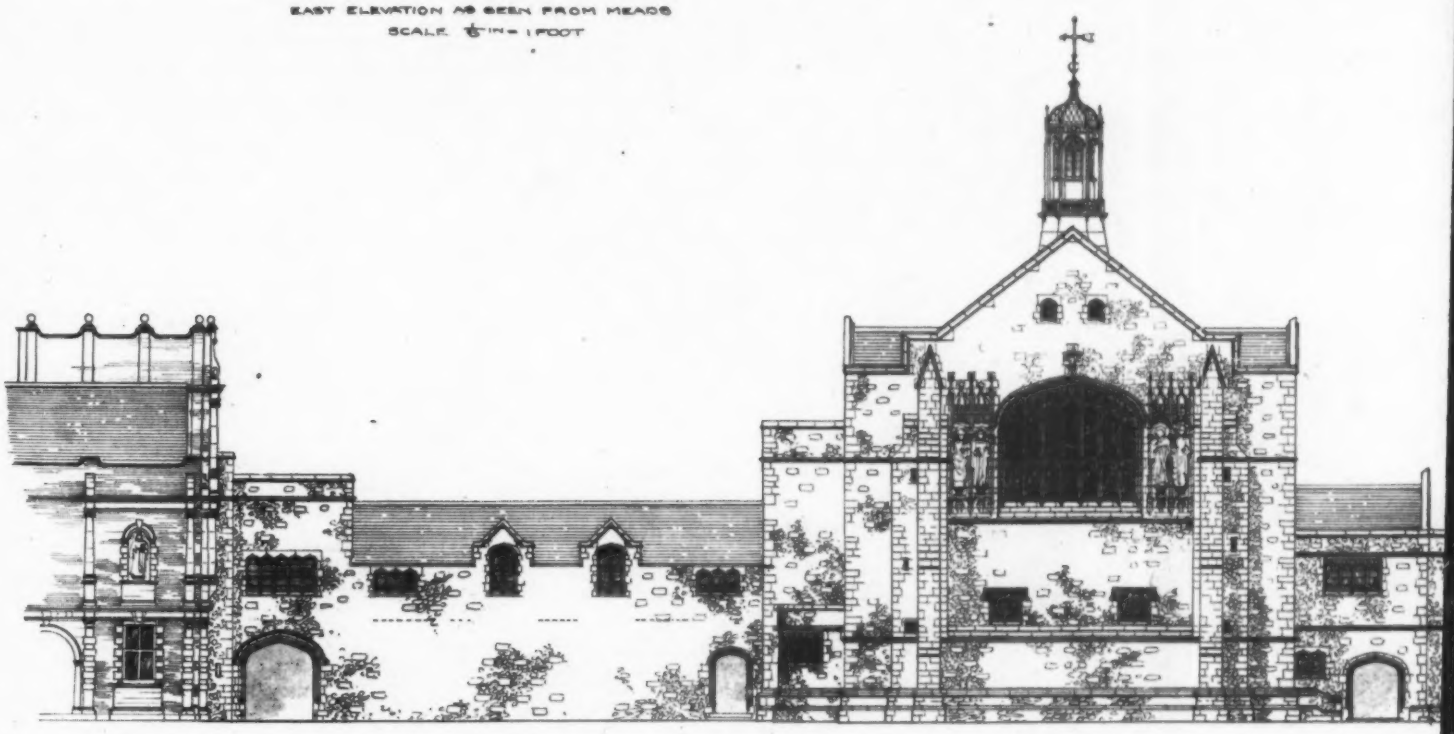
EVERYONE who has entered the competition lists knows that the problem of design for the artist is to find out, or try to guess, what is the kind of thing the promoters want, or what is likely to be the choice of the assessor. It is not mainly and firstly a question of the designer's own predilections or taste which in most cases, if he is wise, governs his thoughts. Therefore the announcement of a trade mark competition, which is to be settled by various members of the staff of the firm for whom it is intended, will turn the thoughts of would-be competitors to the consideration of what may be the mental outlook of those who are to be the judges. It is quite in keeping with the spirit of the times that such a competition has been arranged, and it will be for the competitors to try and estimate how far ingenuity of design and how far pure artistry will appeal. To arrest attention appears to be the first law of advertisement design, and it is obvious that though this may be done by a very high order of art, it may also be quite well done by something which has no claim to be called artistic at all. Messrs. Robt. Ingham Clarke & Co., who are instituting this competition, ought to meet with a good response, as the winning design is to secure an award of 100 guineas, and is to be no larger than 24 in. by 19 in. As colour is of itself an important factor in design, and the conditions say the designs are to be in colour, we may point out that what may look well in colour may be far less telling rendered in black and white. We do not quite like the conditions that "all modelling and all outlines are to be in bold black, pen and brush lines"; but even this will not prevent the success of a master of drawing.



Design for Winchester College War Memorial. By MR. F. L. PEARSON, F.R.I.B.A.

WINCHESTER COLLEGE WAR MEMORIAL

EAST ELEVATION AS SEEN FROM MEADS
SCALE $\frac{1}{8}$IN = 1 FOOT



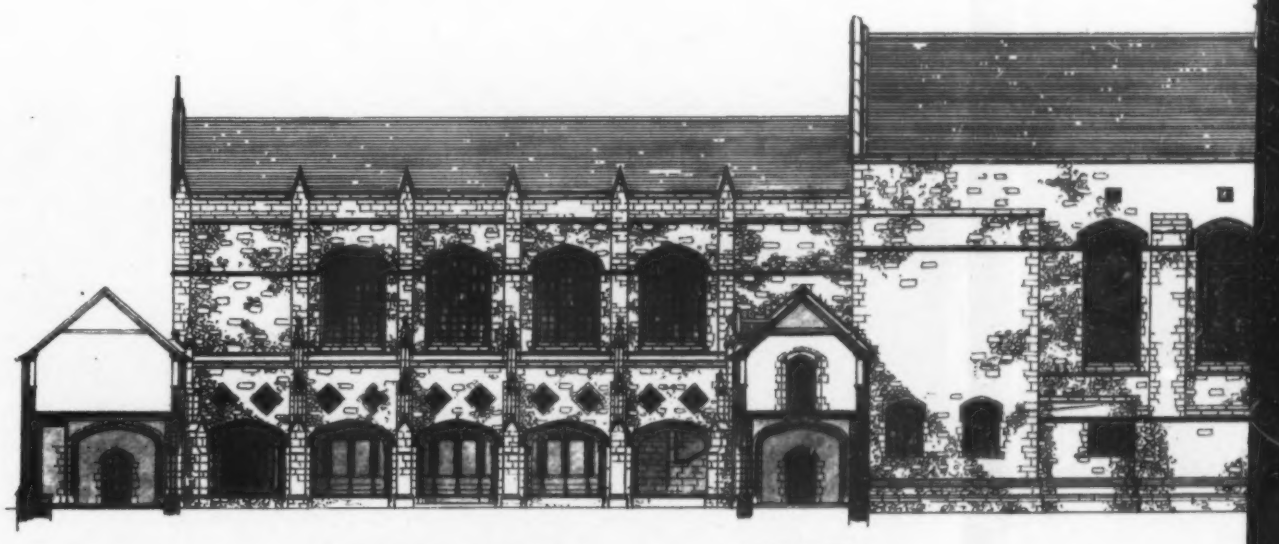
MUSEUM

EAST WALK OF CLOISTER
WITH GALLERY FOR WICCAMICA OVER

MEMORIAL HALL
EAST SIDE AS SEEN FROM MEADS

WINCHESTER COLLEGE WAR MEMORIAL

SOUTH ELEVATION OF HALL, CLOISTER, AND CHAPEL
SCALE $\frac{1}{8}$IN = 1 FOOT



KINGSGATE STREET

WEST WALK OF CLOISTER
CECIL RANGE OVER

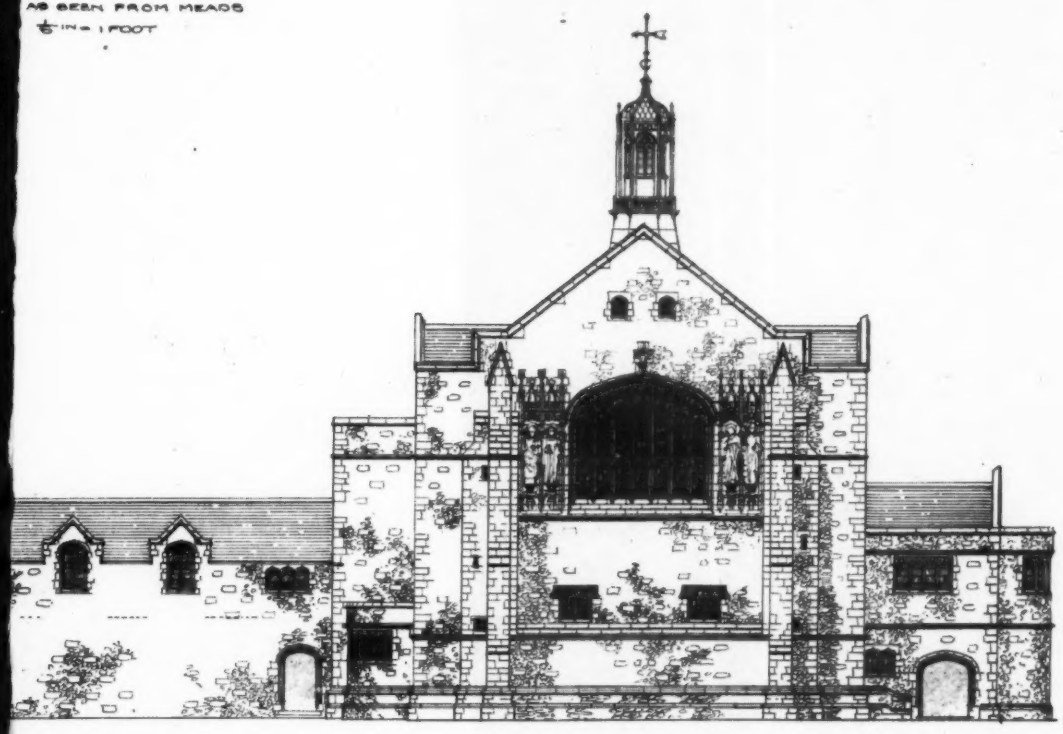
MEMORIAL CLOISTER
WITH NEW CHAPEL BEYOND

EAST WALK OF CLOISTER
GALLERY OVER FOR
WICCAMICA

SCALE OF FEET

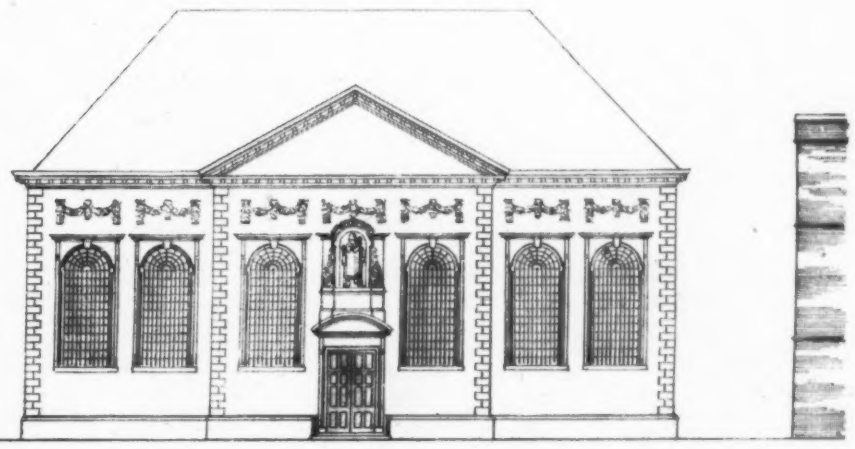
WINCHESTER COLLEGE WAR MEMORIAL.—Design by Mr. Frank L. P

E WAR MEMORIAL
AS SEEN FROM MEADS
1/16 IN = 1 FOOT



WALK OF CLOISTER
LERY FOR WICCAMICA OVER

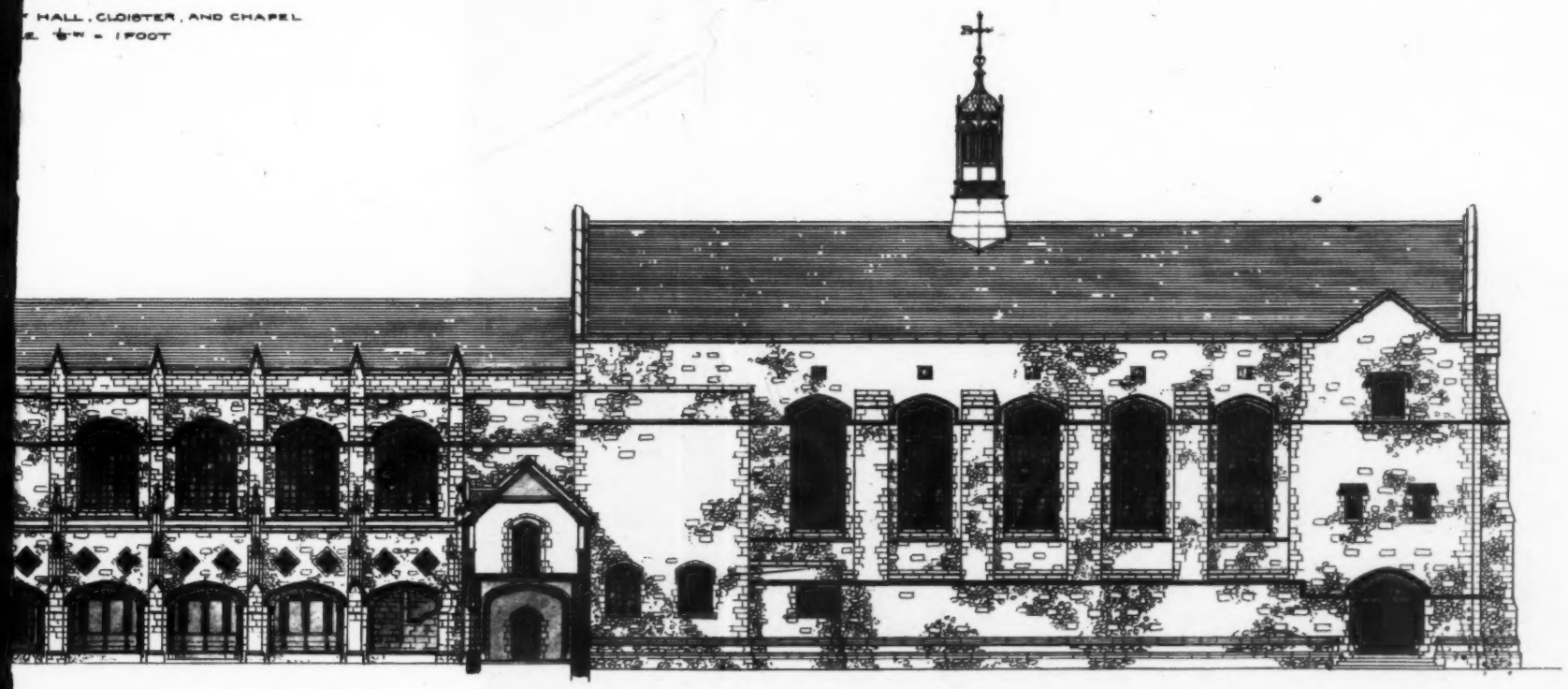
MEMORIAL HALL,
EAST SIDE AS SEEN FROM MEADS



SCHOOL IN NEW POSITION

CLASS ROOMS

WAR MEMORIAL
HALL, CLOISTER, AND CHAPEL
1/16 IN = 1 FOOT



MEMORIAL CLOISTER
WITH NEW CHAPEL BEYOND

EAST WALK OF CLOISTER
GALLERY OVER FOR
WICCAMICA

MEMORIAL HALL
SOUTH SIDE AS SEEN FROM MEADS

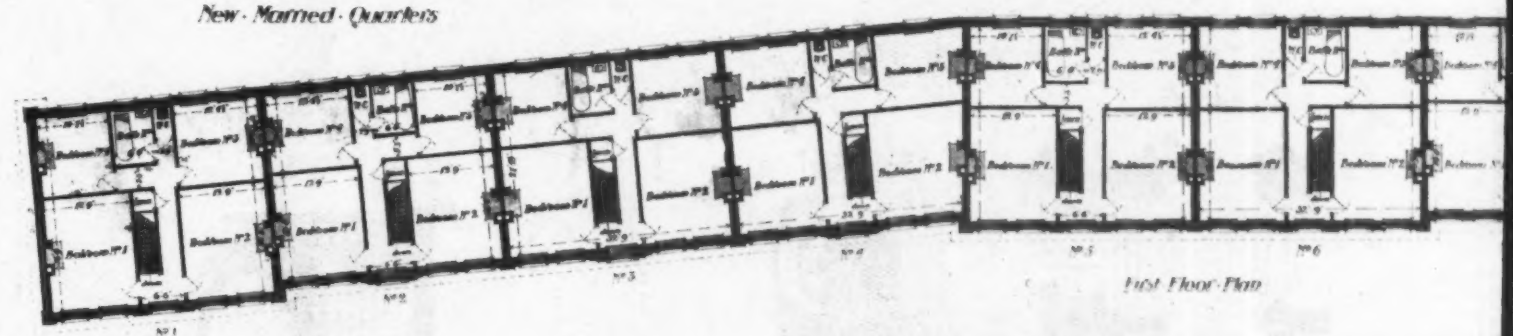
SCALE OF FEET

WINCHESTER COLLEGE WAR MEMORIAL.—DESIGN BY MR. FRANK L. PEARSON, F.R.I.B.A.

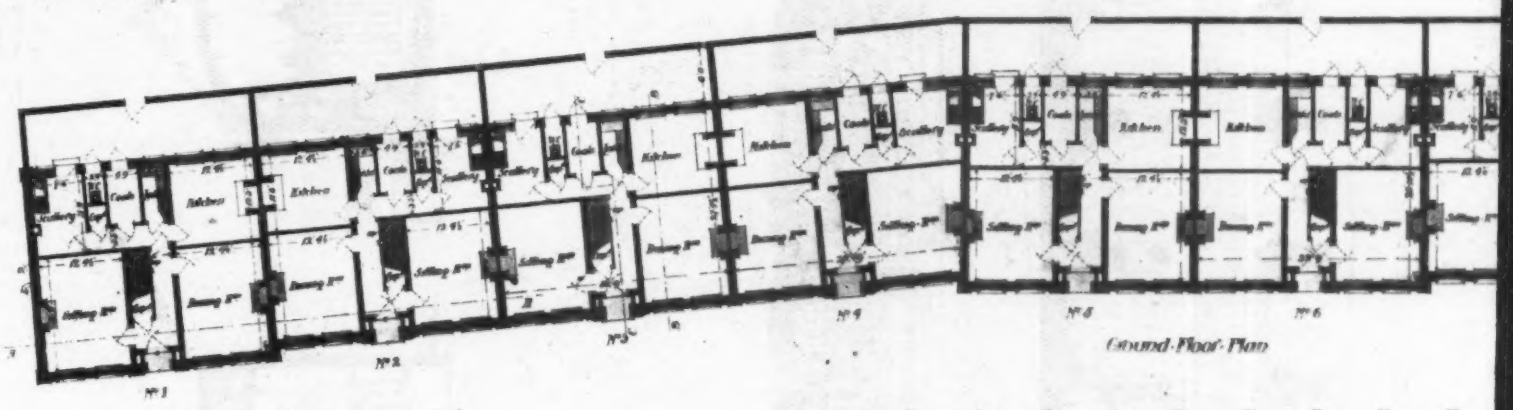
Valencia · Cable · Station

The · Western · Union · Cable · System

New · Married · Quarters

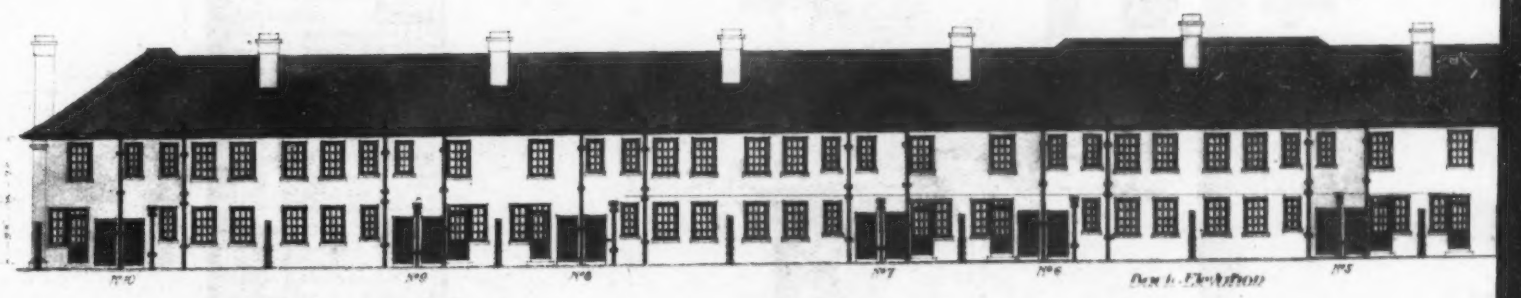


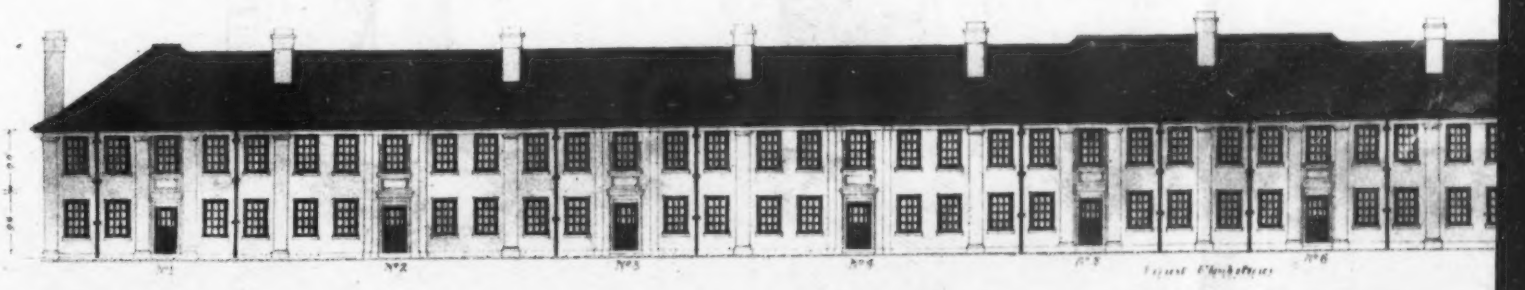
First Floor Plan



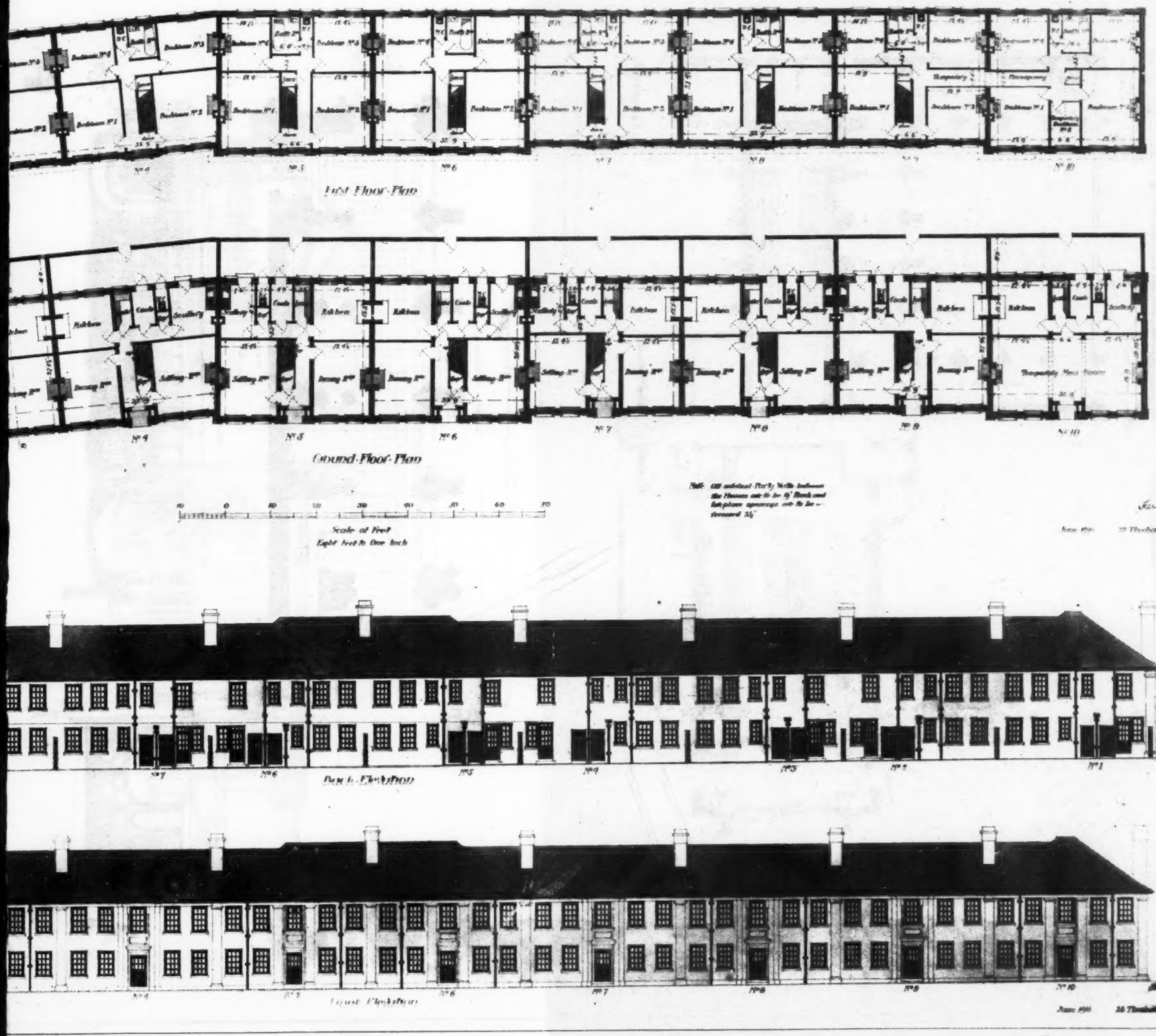
Ground Floor Plan

Scale of Feet
Eight feet to One Inch





VALENCIA CABLE STATION: NEW MARRIED QUARTERS.—DESIGN BY MR. HAR



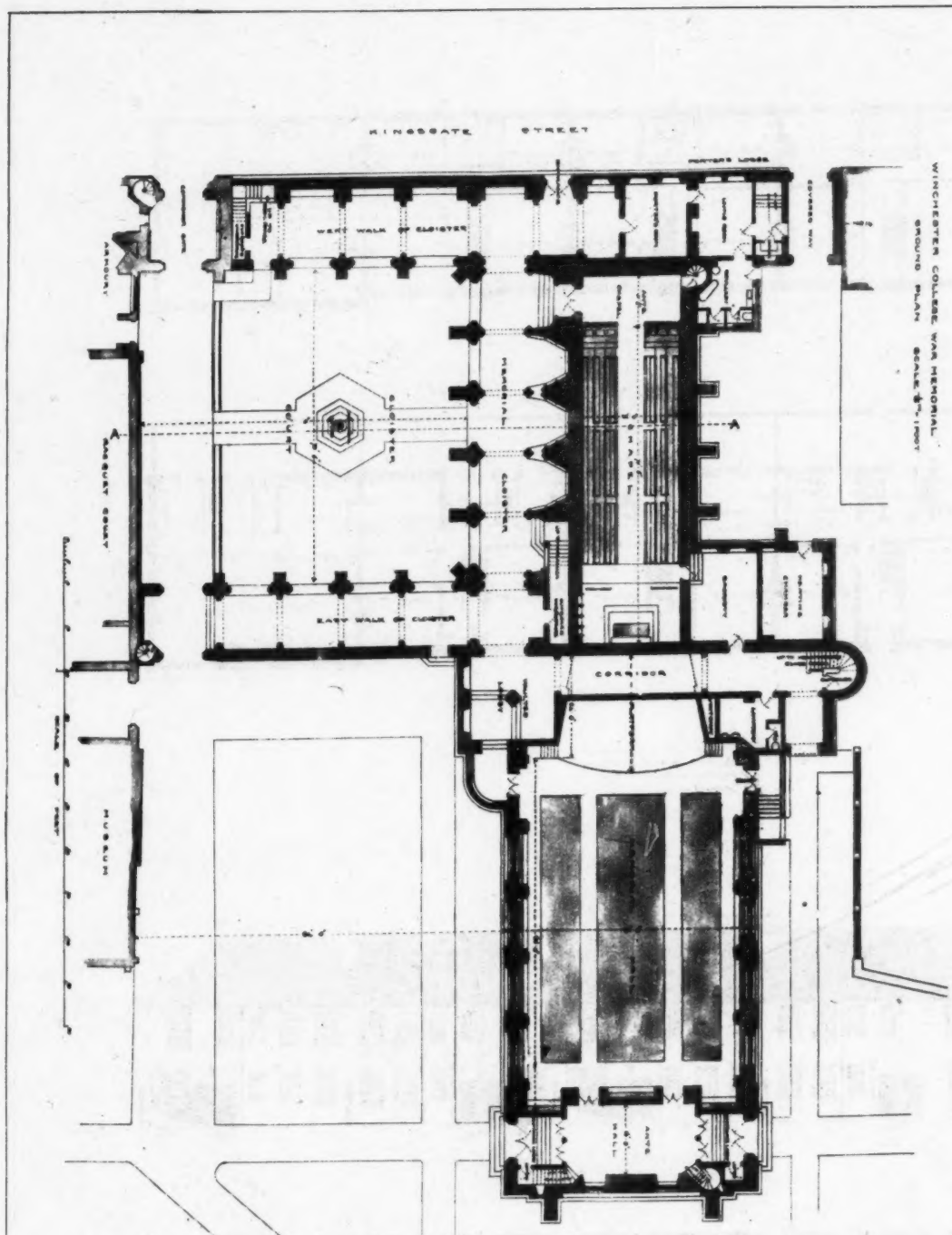
VALENCIA CABLE STATION: NEW MARRIED QUARTERS.—DESIGN BY MR. HAROLD GOSLETT. F.R.I.B.A.

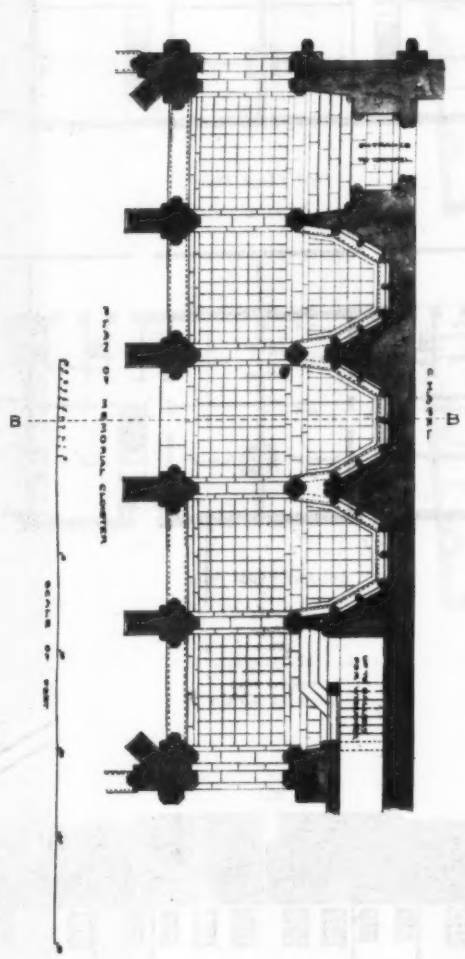
WINCHESTER COLLEGE WAR MEMORIAL
SECTIONS OF HALL

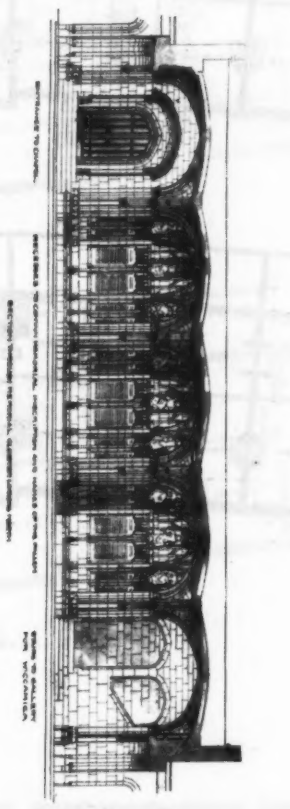
WINCHESTER COLLEGE WAR MEMORIAL
DETAIL DRAWING OF MEMORIAL CLOISTER

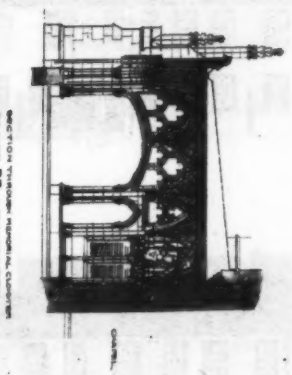
PLAN OF MEMORIAL CLOISTER

SECTION THROUGH MEMORIAL CLOISTER ON LINE BB LOOKING WEST









WINCHESTER COLLEGE WAR MEMORIAL—DESIGN BY MR. FRANK L. PEARSON, F.R.I.B.A.

RECONSTRUCTION IN THE ARCHITECTURAL PROFESSION—V.

PROFESSIONAL UNITY.

By HERBERT H. WIGGLESWORTH, F.R.I.B.A., and H. M. FLETCHER, F.R.I.B.A., President of the Architectural Association.

WE may take it that the more closely any calling approaches to the status of an "art," the more difficult is it for that calling to attain professional unity. The intensely individual nature of a painter's work, or a sculptor's or an actor's, absorbs so much of his energies as to leave him little surplus for the formation and furtherance of professional societies, as generally known. Whether those callings would benefit by the existence of such societies is a question that does not concern us here. At any rate, the fact remains that where they do combine it is either into schools—impressionists, symbolists, cubists and the like—for the advancement of new doctrines and methods, into benevolent societies, to help the less successful, or into clubs, for social enjoyment; rarely into associations for the representation and general welfare of the calling.

We architects are jealous of the status of architecture as an art. The word "art" has rightly fallen under suspicion of late, from its connection with mysteries, pundits and Grand Panjandrums. It is a word that should hardly ever be used to the general public, but among ourselves we can stick to it for convenience, accompanying it with the wink of the initiated that robs it of its pretence. With all its stale associations, the word stands for something real, something that must always be in the forefront of our aims, something that we do well to guard jealously. It is this very attribute of architecture, calling on each individual to cherish his individuality, that makes it hard for us to combine. But, from another aspect of our calling, combination, the right to be heard as a whole, is a necessity. For as directors of building operations we are in touch with affairs, with some of the mightiest forces that are now swaying the fortunes of this distracted world—far more closely in touch than the purely artistic callings, and also more closely than such professions as medicine and law. We are interested, not only as citizens, but directly as architects, in questions of wages, capitalism and trades unionism, national health and housing, town planning and the like. If manual workers, as seems probable, and as many of us hope, obtain a greatly increased share in the direction of their own lives and occupations, and the building of the country comes within the scope of a Building Trades Parliament or Whitley Council, representing employers and employed, such a Parliament would surely be incomplete if architects are without a voice in the settlement of the questions with which it will deal. It may affect us, our methods of work and our means of livelihood, in a thousand ways that cannot yet be foreseen. Our position, in intimate and every day contact with these questions, yet neither employers nor employed, neither capitalists nor wage-earners, would make our counsels often of peculiar value to both sides, and might go far in furthering the very object of such a Parliament, the frank and free discussion of difficulties from all points of view, and the moderation of factious bitterness which frank discussion will usually bring about. Here is a case, not yet arisen but almost certain to arise, and for which we should therefore be prepared, where justice to ourselves and to the community calls for the representation of architects. And representation calls for unity.

Again, occasions arise when the Government ought to have the considered advice of architects. It contemplates action in which architects could and would help, or which may seriously injure the architecture or architects of the country; it is quite blamelessly and quite blankly unforeseeing of these issues of its action; it is for us to enlighten it. Such cases have arisen, and we have attempted the enlightenment in a way to defeat our own object. A harassed minister, faced by deputations from different societies, arriving at different times and offering contradictory counsels, will be apt to write off the architectural profession as unhelpful. With unified representation our position and our power for good would be incalculably strengthened. There would be sectional complaints, doubtless, when action was taken, of which a particular section disapproved; but at the present time there are universal complaints when representations are made and no action results. And in the matter of complaints the sectional is preferable to the universal; and so here again representation calls for unity.

For the representation that we need is that of the entire profession, something more comprehensive than any of the existing bodies can claim to give. The Institute, the Society, and the Association are each representative either of a section or of a body of opinion in the profession. Nothing, in our opinion, would be gained by the fusion, amalgamation or absorption of these societies. Our calling is too many sided to be properly served by any single society, and the power of choice acts as a safeguard against discontent. The danger of confining all the followers of a varied calling within the bounds of a single society is the danger of a too rigid organisation, of giving play to the strong centrifugal forces which exist in any large collection of human beings. The advantage of the present state of things is this, that every architect can find his own natural level, can choose his own natural surroundings. He is saved from the friction produced by close contact with men of opposite ways of thinking. The very existence of the three societies shows the need of them; the almost inevitable sequel of forcing the three into one mould to-day would be a violent fissiparous action to-morrow, and the old three would be reconstituted, more or less as they were, but at the cost of how much ill feeling and conflict! As it is, they are horizontally linked, in a useful manner, by the considerable number of men who find it natural to be members of two societies simultaneously.

So far, so good. But when the war started, the incompleteness of the present arrangement made itself felt. The horizontal linking was not enough; there was need of a co ordinating body to prevent omissions and reduplications of activity, and such a body must be in a position to take a bird's eye view, must be vertically linked to all three, and must, if possible, bring into closer relations the two classes of independents, the Gallios who drift about without caring to join up with their fellows, and the stalwart free lances, whose counsels may often be of great value. This led to the formation of the Architects' War Council, whereby men of the most diverse views were brought to work together in a friendly spirit. Committees were formed and housed in three different buildings, but no committee consisted exclusively of members of one society, and everyone found it easy and natural to work alongside of men whose aims he had hitherto believed to be incompatible with his own.

If vertical linking can accomplish so much when hurriedly improvised to meet a crisis, it is hard to see why it should not be equally successful if carefully devised to further our common and constant aim in time of peace, the advancement of architecture and architects. Amalgamation could only be enforced at the cost of straining and probably snapping ancient loyalties, prejudiced perhaps, but not negligible, and in many ways valuable. The expedient of a superior council has passed beyond the stage of experiment and been proved practicable. Under such a council, representing all the existing societies, and, if means can be devised, the free lances as well, each society would retain its own individuality, modified under the direction of the council, so as to concentrate it more definitely on the particular work to which it is best suited. The purpose of these articles is suggestion and the working out of a complete scheme is a task of time and the co-operation of many brains. On broad lines, then, we would suggest that the task of the Institute should be the raising of the national status of architecture and the better equipment of architects for their work; of the Society, the welfare of architects and professional practice; of the Association, education and the interests of the younger men. There is, at any rate, general agreement that present conditions leave room for improvement. We have endeavoured to point out a way in which such improvement might be made without scrapping what is valuable in present conditions.

Steel Exports.

The Minister of Munitions gives notice that following on the withdrawal on January 31, of certain subsidies on steel, the drawbacks payable to the Government in respect of exports of steel have been reduced as from February 1. Particulars of the reduced rates of drawbacks may be obtained on application to the Ministry of Munitions, Steel Department (Room 104), Hotel Victoria, W.C. 2.

FUEL ECONOMY IN PRIVATE HOUSEHOLDS.*

By A. H. BARKER, B.A., B.Sc., Wh.Sc.

Lecturer in Heating and Ventilating Engineering, University College.

It is impossible in these articles to discuss the theory of radiation, but I may explain that the amount of radiant heat given off from any hot surface varies not only according to the temperature, but according to what is called the emissivity or radiativity of the surface. The maximum possible emissivity or radiativity exists in the interior of an enclosed space, all of which is at a uniform temperature.

If, for instance, we could make a box or chamber of fireclay, red-hot inside, we should get considerably more heat from it than we should from a flat plate of fireclay heated up to the same temperature. The mere enclosing of the surface into the form of a box increases the amount of heat radiated from it. The explanation of this curious phenomenon may be taken as a fact.

If, therefore, we can so form our glowing coals into the form of a hollow box, we shall effect both ends together. We shall increase the radiativity of the glowing fuel, and at the same time we shall prevent the heat being carried off by an excess of air, and so shall raise the temperature of the burning coal, and cause a large proportion of it to be emitted as radiant energy in a horizontal direction instead of inclined upwards.

This is the object of the construction of the fire now to be explained. The principle is really very simple. The idea is to line the back and the sides of the fireplace with large solid lumps of coal so as to leave only a small space or focus between these large lumps. The fire proper is built within the space so formed with sticks and small coal in the ordinary way. This is lighted, and when it has been raised to a strong, hot glow the whole of the top of the fire is closed in by cinders and ashes, mixed with small, broken coke.

When the fire is built in this way it must be absolutely left alone, and not poked or touched or stirred. It will then not only last for twelve to eighteen hours without being touched, but it will give off the maximum quantity of heat throughout the whole of that period, and save perhaps 50 per cent. of the fuel that would be burnt in an ordinary fire of the same size if built in the usual way.

The blocks of the coal at the back will become incandescent on their surfaces, and so will maintain the temperature, and they will burn away very slowly, so much so that the same blocks of coal can be used on two or more days, if the coal is of a suitable character.

By this means the radiant efficiency of a fire may be raised from about 20 per cent. to 35 or more per cent. That is to say, the amount of heat obtained from the same combustion of coal is increased, I believe, by about 30 per cent., though the experiments I am making on this point are not completed. The one essential is that the fire shall not be poked or stirred.

It is true that a fire used in this way does not give out so much heat as the fire allowed to burn away in the old extravagant manner, but although the quantity of heat may be slightly reduced, the quantity of fuel burnt is reduced in a much greater proportion—that is, the efficiency is greatly increased.

No arrangement of fire bricks or any other device which has been recommended is of the slightest use in increasing the efficiency of the fire. The most which such devices can do is to reduce the fuel consumption by reducing the grate area, but they reduce the quantity of heat given off in the same proportion, and so are of little use.

Now, let us consider how gas can be most economically used for room warming. I have already pointed out that the combustion of good and pure gas does not give rise to any deleterious products of combustion, deleterious in the sense of being poisonous. Carbon dioxide and water vapour are practically the only products, neither of which, except in excess, is deleterious or even unpleasant.

I confess, however, that I am here on delicate ground. Although modern physiologists will confirm this statement, I am not myself fully convinced of its truth. Perhaps it is the prejudice of a lifetime, but I cannot myself be altogether happy at the idea of living in a room in which there is an unusual amount of carbon dioxide, on in which the air is unusually moist.

Every private experience that I have had leads me to believe that, whether the physiologist knows the reason for it or not—I am inclined to think he does not—there is something not altogether desirable in the presence of carbon dioxide in a room in spite of all the experiments that have apparently proved the contrary. Of one thing, however, I am certain, that is, that if gas is burnt in the air of a room in such a way that it produces any smell whatever, howsoever faint, it is therefore self-condemned. For the chemical substances in gas are unquestionably of a highly poisonous and deleterious character unless and until they are completely burnt.

The presence of any smell of gas whatever in the air of a room indicates that the combustion is not complete, and that we are, therefore, in the presence of unburnt products, some of which may be, I put it no higher than this, of a highly poisonous character. In particular, there is that deadly gas carbon monoxide, of which the half of 1 per cent. in the air of a room may cause the death of any person breathing it. Hence, if there is a suspicion of a smell of gas in a room I, for one, am very suspicious; but I do know from experience that gas can be so burnt in a room that even a person with very sensitive olfactory organs cannot detect its presence. How otherwise would it be possible to have gas-lighting in a room?

But we are not taking any chances. Now one of the cheapest, readiest and most convenient methods of rapidly warming a room and making it comfortable to sit in, is to do it by burning naked gas flames in it, in such a way as to avoid these two inconveniences:

(1) The possible production of poisonous products.

(2) The overheating of the upper layers of air.

If one burns naked gas flames in an ordinary way in a room the hot products of combustion will at once rise to the ceiling and cling there until they are cooled. This is the exact opposite of what good heating ought to do, which is to heat the floor and not the ceiling. Therefore, if we are to burn gas at all we are to burn it in such a way that it throws the heat on the floor, and the method I have devised for this is as follows:—

It consists of a ring of gas burners with luminous flames. I specify luminous flames instead of bunsen flames, because there is less likelihood of deleterious products of combustion being disseminated into the air of the room. These flames burn underneath a sort of canopy partly of firebrick and partly of a metal surface, preferably of a reflecting character, which reflects all the radiant heat downwards on to the floor in the space surrounding the burners. The burners should be on as low a level as is consistent with safety, and underneath the burners there should be a kind of tray, so that in the event of any hot particles falling from the fireclay they should not fall direct on to the carpet but on to the tray. The tray will further have the effect of thoroughly mixing the hot products of combustion with cold air, and thereby cooling them to such a pitch that they will not rise straight away to the ceiling, but will tend to warm the whole of the air of the room.

Now a device of this kind placed under the breakfast table on a cold morning will keep the persons sitting round the table perfectly warm at a very small consumption in gas, probably a halfpenny worth to one pennyworth of gas would make a 2,000 cubic ft. room quite comfortable for persons on a very cold morning.

A similar method of employing electricity, that is, by placing any kind of electric radiator under the breakfast table would have the same effect.

Fuel for Kitchen Purposes.

I shall now discuss very briefly the practical methods which can be adopted to give effect to the economisation of fuel for kitchen purposes. I have dealt with the principles of this matter in some detail in a course of lectures which I gave during last session. That series has been published, and any person interested can obtain a verbatim copy of those lectures.

It was there pointed out that the principal cause of the gross extravagance of the ordinary kitchen range, and also of the ordinary gas oven was due to the fact that a great deal too much air is allowed to mix with the products of combustion, and so cool them below the useful point. It was pointed out, too, that the kitchen range has an efficiency not greater as a rule than some 3 per cent., which means that of all the whole heat in the fuel about 97 per cent. is thrown away, and 3 per cent. only is used.

Perhaps the principal cause of waste in a kitchen range is due to the construction of the fire, which allows air to pass in to the combustion chamber over the fire without causing the combustion of an equivalent amount of coal or coke.

The cracks in the stove admit cold air into the flues, so cooling the products of

(*Continued from page* 115)

combustion to such an extent as to make the fire very extravagant in consumption. The mechanism of a rising grate of an ordinary range makes it impossible to prevent this result. The best method, therefore, of making a range of this kind more economical is to fix the grate at the lowest point, and to line the fire all round with slabs of fireclay, so as to shut off the glow from the fire from the front. Further, it is necessary to stop up all the cracks leading into the flues with thin fireclay or gannister, which will make air-tight joints; and to stop up the cracks through which the air gets into the flues.

When sweeping the flues is necessary, this may be broken and re-made again after the cleaning is done. In order that this may be effected, it is unfortunately necessary that the convenience of the stove itself shall be considerably diminished. It will be impossible if this principle is adopted to uncover the fire from the top, and put a pot or kettle on to boil on the hole which is commonly found above the fire on most ranges.

The part of the range which is probably responsible for the greatest waste is the hot water boiler. It is advisable that the hot water supply shall be shut off by a damper, or by a slab of fireclay throughout the greater part of the day, the water being made hot at one time of the day only, and allowed to remain cold for the rest of the time, though it will probably be made lukewarm by the natural leakage of heat through to the boiler from the fire.

In the lectures alluded to, it was pointed out that an enormous waste of heat commonly arises through the pipes and the hot tank of the hot water supply system being left uncoated. Where this is the case, the householder should obtain a large piece of roofing or carpet felt, which should be tightly wrapped round all exposed pipes and cylinders and tanks, and fastened on with string or wire; the greater the thickness of the felt which is put on, the greater will be the effect. This alone will make an immense improvement in economy, and also in the supply of hot water.

As regards gas cookers, the principal waste of heat is due to the fact that these are too freely ventilated. The whole of the bottom of the oven is open for cold air to have free access to the interior of the oven, and there is generally an escape pipe at the top of the oven which is much too large, and which allows the heat of the oven to escape into the open air.

If this outlet has not got a damper, or some means of checking it, one should be at once inserted or contrived. It can generally be done with little trouble at the outlet of the pipe.

An improvement in the economy of the oven can also often be effected by means of a fireclay slab, which is placed inside the oven in such a way that the flames impinge upon it before getting into the oven. This slab will capture and retain the heat of the gas. Once the slab is hot the gas may be turned out, and the oven will then remain heated for a considerable period, especially if the outlet is then entirely closed.

The hot plate at the top of an oven is generally responsible for a huge waste of heat. It is designed principally for strength, and without any regard to fuel economy. The gas flames are some inches below the bars on which the cooking vessels stand, allowing much of the heat generated by the combustion of the gas to be dissipated and mix with the cold air before it gets on to the oven.

There is no complete remedy for this, except a complete transformation of the principle on which the hot plate is constructed, and this is out of the question at the present time. Great economies may be effected in boiling and heating vessels placed on a gas ring by surrounding the vessels with a jacket which excludes cold air, and keeps the products of combustion in closest contact with the object itself.

A considerable part of the gas used for ordinary cooking purposes is that employed for boiling kettles and water heating. This simple process is commonly effected by placing the vessel to be boiled over an ordinary gas ring supported on bars, and allowing the tips of the flame to impinge on the underside of the vessel.

I explained in the course of lectures referred to that this process was a very extravagant one, inasmuch as it does not utilise usually more than from 25 to 30 per cent. of the heat in the gas, the remainder being wasted.

A high efficiency for apparatus of this kind is 50 per cent, that is to say, that if we use half of the heat of the gas by this process we shall do very well.

I explained that the root cause of this gross extravagance is that, by this method, a large amount of cold air is allowed to mix with the hot products arising from the combustion of the gas, and that, therefore, the products which actually come into contact with the vessel are at a much lower temperature than they ought to be; and further, that heat is carried off from the half warmed vessel at a great rate by the convection currents of air which come into contact with it and carry off heat continually.

It is one of the most astonishing things in our present-day situation that this process has not undergone a very general and marked transformation in the interests of economy, especially seeing how simple such an improvement is. It would seem to be almost the first thing to occur to anyone who reflected on the extravagance of this process that the most desirable improvement would be to shut off, as far as possible, the currents of cold air, and confine the heat within a small focus, which would concentrate it on the vessel to be warmed. By this means we can sometimes save 30 per cent. or more of the heat which we now waste, and by means of a simple apparatus, which might almost be made by anybody, and which will effect this end, a great saving may be effected.

Take an ordinary gas ring, the gas supply to which passes through the meter. Also an ordinary kettle, which is full of water and is provided with a thermometer, from which we can see how far from boiling we are at any moment.

Take the reading of the gas meter and light the gas ring, and place the ordinary kettle on the ring in the same way as one would in an ordinary case, and note the amount of gas consumed. The efficiency of this process of boiling a kettle will be found to be somewhere in the neighbourhood of 30 per cent. probably.

Now place on the same kettle a simple jacket, and repeat the experiment exactly as before without any alteration whatsoever, and with the jacket on the kettle. The great difference which is effected by this simple device will at once be seen, and this device is applicable to every case in which any pot is boiled on a gas ring. A word of warning is necessary that things are not always what they seem, and in order that conclusions drawn from any experiment may be valid, one must take care that the effects observed are actually simply dependent on the conditions which one has tried to investigate.

RESTRICTION OF BUILDING.

ALTHOUGH happily the restrictions on building operations imposed under regulations made under the Defence of the Realm Act will soon be matters of only historic interest, one word may be said to explain the case The Director of Public Prosecutions *v.* Ford reported in our issue for December 24.

The respondent in that case had obtained a licence on August 21, 1916, to do certain work on a dwelling house at an approximate cost of £500. Between the date of the licence and February 15, 1917, building work on the said house had been done to an approximate cost of £1,000, and after February 15, 1917, and up to August 15 further work had been carried out at a cost of about £364. It was on this latter date that the summons was issued against the respondent for having carried out building work without licence.

Now, in the original report the materiality of these dates was not made quite clear. By Section 11 of the Summary Jurisdiction Act, 1848, the information shall be laid within six months of the date when the matter of complaint arises and, therefore, it was contended by the respondent that all the work executed more than six months before the information was laid must be disregarded, and only £364 had been expended since that date.

The Justices had held that all the work done before February 15 must be disregarded and, therefore, that the work done since that date came within the proviso to the Order, "provided that where the total cost of the whole completed work in contemplation does not exceed £500" a licence shall not be required.

The High Court held that the words "in contemplation" referred to the total cost which was contemplated at the commencement of the whole work, and not merely to that which was contemplated at the commencement of that portion of the work which was undertaken within the six months of the information and, therefore, that an offence had been committed.

It was also contended in this case that the Order was *ultra vires*, but this contention was negatived, and it is unnecessary to refer to that part of the case here as we only are pointing out the one point which seems obscure.

The case is reported at length in the *Weekly Notes*, February 1.

Greater London.

An interesting question to be raised at the forthcoming London County Council elections will be the proposal to create a new central authority to supervise the government of "Greater London." The area over which the body would have jurisdiction, it is suggested, should be not smaller than the Metropolitan Police District and not larger than that of London and the Home Counties. In principle, such a scheme has the general support of both the Municipal Reform and the Progressive parties.

THE CONCRETE INSTITUTE.

DOVETAIL CORRUGATED SHEETING.

AT the last Ordinary General Meeting of the Concrete Institute on Jan. 23, at Denison House, 296, Vauxhall Bridge-rd., Westminster, S.W. 1, a paper on "Dovetail Corrugated Sheeting" was read by Mr. M. Noel Ridley, M.Inst.C.E. In the course of his remarks he said :—

Dovetail corrugated steel sheeting consists of flat steel sheets crimped into the form of dovetails, and is usually crimped in three depths, viz., No. 1 of $\frac{3}{4}$ in. section, No. 2 of $\frac{1}{2}$ in. and No. 3 of $\frac{1}{4}$ in. section. The maximum size of sheets is 3 ft. 9 in. wide, that is, in the direction of the corrugations, and 5 ft. 6 in. in length, or across the corrugations. The sheets vary in gauge from 20 to 28. It is only section No. 1 ($\frac{3}{4}$ in. in depth) that can be crimped to 20 gauge.

The author's definition of reinforced concrete is as follows :—"Concrete reinforced with steel or other reinforcement so that the steel and the concrete will work in harmony, the concrete taking the compression, and the steel the tensile stresses, or the steel may be in compression working in harmony with and reinforcing the concrete.

Further, it is to be noted that for the purpose of this definition any material may be termed concrete that sets from a plastic state and hardens so as to work in harmony with the steel in taking up the stresses. The following test shows that dovetail corrugated steel sheeting fulfils this condition.

The construction of test slab is as follows :—One 2 ft. length of 2 ft. 6 in. shallow or No. 2 sheeting with 3 in. bearing, ends free ; $1\frac{1}{2}$ in. of concrete on top, made of coke breeze and cement, mixed 5 to 1 on top ; $\frac{1}{2}$ in. sand and cement and 4 to 1 underneath ; clear span 2 ft.; concrete forty days old. The total load at collapse of slab was 3,696 lb., which is equivalent to 1,848 lb. per sq. ft. At this load the dovetail sheeting had not broken.

The author has calculated the strain on the coke breeze as 1,492 lb. per sq. in., and of the wrought-iron sheeting as 21.62 tons per sq. in. The $\frac{1}{2}$ in. sand and cement on the underside of the sheeting does not figure in the calculation, and the effective depth is taken at 2 in. This result could not have been obtained if the sheeting had not been working in harmony with the concrete.

Each dovetail corrugated sheet in length or across the corrugations requires 1 ft. 9 in. of flat sheet, so that a sheet weighs one and three-quarter times a flat sheet. Theoretically if the corrugations are made in proportion for any variation of depth the ratio of crimped sheet to flat sheet will always be the same, but in practice the $\frac{1}{2}$ in. sheets are usually made $1\frac{1}{2}$ to $1\frac{5}{8}$ that of flat sheets, and the No. 3 section about $1\frac{1}{3}$. This proportion can be still further varied if required, also a section with greater intervals between the dovetails can be used.

For purposes of comparison the following table gives the properties of dovetail corrugated sheets, ordinary corrugated sheets and flat sheets :—

Description.	Depth of Sheet.	Gauge.	Section Modulus.	Safe Strength of Sheet at 4 ft. span.	Weight per sq. ft.
Dovetail Sheet ..	$\frac{3}{4}$ in.	22	0.1647	108 lb. per sq. ft.	2.223 lb.
	$\frac{1}{2}$ in.	26	0.1062	70 do.	1.4 "
	$\frac{1}{2}$ in.	22	0.1098	73 do.	2.223 "
	$\frac{1}{2}$ in.	26	0.0709	47 do.	1.4 "
Corrugated Sheet ..	$\frac{1}{4}$ in.	16	0.1718	114 do.	2.958 "
	$\frac{1}{4}$ in.	22	0.0859	57 do.	1.467 "
Flat Plate ..	$\frac{3}{32}$ in.	3	0.1582	105 do.	11.47 "

NOTE.—The unit stress is taken as 16,000 lb. per sq. inch.

The full theoretical strength of dovetail corrugated sheets can only be obtained by filling in the corrugations with concrete or stiffening the corrugations in some other way. The ordinary corrugated sheets do not require such stiffening. The ratio of weight of ordinary corrugated sheet is 1.16 of the flat sheet compared with 1.75 of dovetail corrugated sheet.

From the above it will be seen that dovetail corrugated sheets are 50 per cent. heavier and 100 per cent. stronger than ordinary corrugated sheets for same depth and gauge. For sheets of the same strength ordinary corrugated sheets are one-third heavier than dovetail corrugated sheets. A flat steel plate $\frac{3}{32}$ in. thick and weighing 11.47 lbs. per sq. ft. is of equal strength to $\frac{3}{4}$ in. 22 gauge dovetail corrugated sheet and $5\frac{1}{3}$ times as heavy. The No. 3 dovetail sheeting is used extensively as a damp-course in conjunction with sand and cement. It is a perfect preventive of the damp rising in the walls, and what is more important, makes a material of greater hardness than the bricks, and in fact forms an integral part of the wall, there being no chance of squeezing out. It is used also for linings to walls, nailing to wood studs for timber partitions, &c., for laths in place of timber laths for ceilings, forming panellings to ceilings and walls, and backings to cornices and various decorations and enrichments, the plaster being easily worked to the required shape on the dovetail sheeting, which is readily adapted to any form or shape required. It is also used to cover rolled joists, stanchions, &c., as a backing for plaster work.

No. 2 section of shallow sheeting is used for permanent centering for slabs, floors, beams, roofs, columns and partitions, also outside wall cylinders, &c. No. 1 section is also used for partitions and walls with or without H and channel irons for railway carriage floors, for stiffer permanent centering, &c.

These partitions are constructed as follows : Small H iron bars are fixed vertically from 2 ft. to 3ft. apart, and the spaces between them are filled in with the dovetail sheets, usually of No. 1 section ; the dovetails are placed horizontally. This skeleton partition, of great stiffness, is then plastered to the required thickness on both sides. The dovetails form an excellent key to the plaster, the concrete and steel being thus homogeneous ; and for the reason stated above this forms a reinforced concrete partition. It is also fire, sound, damp, and vermin-proof, which is a very great consideration.

For outside walls, hollow walls have been a success. Two walls of skeleton sheeting are erected with a space of 2 in. between them, and they are tied together at intervals. The outer sides only are plastered to the required thickness. The usual total thickness of these walls is $5\frac{1}{2}$ in. This type has been used in important Government buildings.

Floor slabs are usually constructed with No. 2 section sheets, and are lapped in the direction of the corrugations to the required span. The sheets are placed in position and supported at intervals, but without shuttering. Round bars of small section are bent to the required shape, as is usual in reinforced concrete work, and are placed in position. The floor slab is then concreted to the required thickness. For purposes of calculating the strength of the floor slab, the sheeting is taken as the equivalent of reinforcement of .25 sq. in.

For beams the sheeting is made in the form of a trough, the depth of the trough being the depth of the beam below the slab. Flat iron stirrups are placed round the trough and are bolted to it. The top of the stirrup on both sides of the trough is carried up above the trough to within $\frac{1}{2}$ in. of the intended surface of the floor, and at that point the stirrup is bent across the trough and the two ends are bolted together ; it is impossible for the stirrups to slip. To form the reinforcement, bent round bars are used and placed in the trough or skeleton beam in the usual manner. The skeleton beam is erected and supported and is stiffened at intervals without shuttering, and when the reinforcement bars are in position, the beam is concreted.

For columns the sheeting is formed in the shape of a cylinder or tube with the dovetail sheeting corrugations in the direction of the length of the column. The stirrups are of flat iron, placed at the required distance apart round the cylinder or tube and are bolted to the sheeting. The skeleton columns thus made have great stiffness. They are placed in position and only require strutting up to prevent movement ; they are then corrugated from the top. If it is required to have additional longitudinal reinforcement, straight round bars are customarily used and are placed ready for concreting in their positions in the skeleton column. These columns have great simplicity in erection. In all cases after completion the exposed dovetail corrugated sheeting is rendered.

The peculiar form of corrugation is very helpful in minimising and breaking up the spread of sound ; its impenetrability is unique. For thin partitions (2 in. and 3 in. thick) this point is of importance, and this applies to reinforced concrete roofs and floors constructed on this system and also to wood floors with dovetail sheets to form a ceiling.

There have been many cases where the fireproof qualities of these partitions have prevented a fire from spreading with disastrous results.

Domes are usually constructed in the following manner : Small H irons are bent to the curve of the dome in vertical section, fixed radiating and connected at the top to a circular plate or channel iron ring of suitable radius. Dovetail corrugated sheeting is fixed between the H irons with the dovetails horizontal, and when necessary, round bars, resting on the H irons, encircle the dome. The outside is then concreted to the required thickness and the dome is rendered on the inside. No centering is required, but only strutting up and the necessary stiffening while work is going on. Thus all the expensive curved centering is obviated. The domes of the Walton Library, Liverpool, and the Congregational Church, Fairhaven, were constructed in this way. Each of these domes is over 40 ft. in span. A large number of other domes have been erected on this system.

The advantages of the dovetail corrugated sheets of roofing are many. The roof is easily erected ; a minimum of concrete (from $\frac{1}{2}$ in.) can be placed on top of the sheets, making a 1 in. slab, if the under side is not rendered or only the dovetails are filled up ; if rendered it will amount to not more than $1\frac{1}{4}$ in. thick. Usually no strutting is required.

Large ventilating air trunks have been constructed with H irons and dovetail corrugated sheets. The H irons are bent to the shape of the trunk, which is completed by rendering on both sides.

The machine for making the dovetail corrugated sheeting was invented and patented by Mr. A. O. Wright in 1893. Messrs. Hugh L. Cunnah and Henry A. Hughes invented and patented certain methods of application for the dovetail corrugated sheeting. The partitions made with dovetail corrugated sheets and H channel irons were known as the "Cunnah-Wright Partitions." The further development of the sheeting for reinforced concrete and other work now known as the "Lewis System," is due to the author, ably assisted by the late Mr. Percy Dawkins, who for many years acted as manager to the Lewis Construction Co.

HOUSING DEVELOPMENTS AT DUNDEE.

THE City Engineer and Architect of Dundee, Mr. James Thomson, has drawn up a report on housing developments which has been submitted to the Housing and Town-Planning Committee of his Council, and it is interesting to compare the efforts of our friends across the border with those of the municipalities in this country. The author starts by summarizing the advantages of a comprehensive scheme and his argument that this will reduce the necessity for hospitals and like institutions, is worthy of financial consideration. During the last half-century, the population of Dundee has doubled, and its death-rate has been halved, and in the next fifty years a similar improvement is anticipated. As regards the removal of congestion, the point made that demolition schemes and improvements of slum areas must, to be successful, be prefaced by the erection of new houses in open country, is a very important one, for too often have improvements merely meant eviction and reduction of housing, and nothing more as far as the vital problem of accommodation is concerned. The wage-earning capacity of the city is stated to be reduced annually by £400,000 by mortality due to consumption, a striking figure, inasmuch as this mortality does not appear particularly high, hence there is plenty of congestion still to be tackled. The first of an excellent series of coloured maps of the city and district shows radial zones depicting the density of population, but the boundaries of these zones do not appear very convincing.

Absence of a previous far-seeing plan of development is blamed for many of the present traffic difficulties and obstructions, and a map is given showing the main traffic arteries which, it is suggested, could be relieved by the provision of an outer ring road, still well in the city but avoiding the present central routes. This means of diverting heavy and through traffic should generally commend itself as against the heavy cost of widening important streets where frontages possess high values. Some immediate scheme is urged as tending to facilitate its gradual fruition economically.

Beyond the central area a new system of main roads is suggested, which should be planned on general lines as regards width and form the key to subsequent housing developments, and it is suggested that such roads might be made attractive by the provision of open spaces and the introduction of colour, and the importance of preserving attractive points of view in building along such roads is emphasized. A plan is appended showing a new road encircling the city outskirts and picking up the existing radial arteries from the centre of the town. The author would make this ring road 160 feet wide with a central tramway track in grass, and a good carriage and footway on each side along which trees would be planted. It is further suggested that Parkways—roads lined by trees—apparently chiefly for foot traffic, should be formed following existing roads where possible to connect the various public parks of the city, a scheme regarded as practicable, upon which we congratulate the fortunate position of Dundee. The commanding position of the city as regards its eight miles of frontage on the river Tay, is next dealt with, and a bird's eye perspective is given showing how the present esplanade can be improved and land reclaimed; the view given extends from the harbour to the old Tay Bridge and includes extensive formal lawns, gardens, and monumental buildings; and, further, a roadway over the river on the foundations of the ill-fated bridge. This bridge and approaches are estimated to cost £600,000 and Mr. Thomson thinks that two-thirds of the cost would be borne by the State. The reclaimed area would be about 900 acres. It may assist those interested in development problems from a comparative standpoint to know that 42 per cent. of Dundee is residential, 36 per cent. agricultural, while 10 per cent. is devoted to parks and private open spaces. Turning to transit, stress is very properly laid on the necessity of transit facilities working hand-in-hand with housing development, and the seven radial tram routes should be linked up by the proposed ring road, with a special tram track. The lines, being laid like railway lines, it is stated that a speed of 30 miles an hour might be attained in the outlying districts. This, combined with cheap fares, will do much to enable the development of land distant from the town to be successfully approached, both for houses and works. This development is illustrated by some comparative views of present and proposed Dundee streets, and this is further exemplified by a map showing the present and proposed housing works areas.

The author proceeds to enumerate the specific sections of his very large programme which should be undertaken at once; and, in conclusion, gives one or two schemes which show the method of laying out new housing areas. Each area should have its centre, an open space about which, suitably grouped, should be the public buildings—church, school and institute—which shall enable the community to feel that it has a common meeting ground.

Dundee has a fine position geographically and, although the proposals reviewed are drawn on very broad lines, we feel that the city is fortunate in possessing an official who can handle this complex problem in so efficient a manner.

MUNITION WORKS AND FITTINGS FOR HOUSING.

Speaking at the annual general meeting of the Glasgow Ironmongers' Association, held last week, Mr. Lachlan A. McGeoch (President of the Ironmongers' Federated Associations and Past-President of the Glasgow Association) referred the meeting to a speech which had been delivered by Mr. Winston Churchill when he occupied the position of Minister of Munitions, and in the course of which—addressing a conference of representatives of employees and trade unions—he said that "arrangements were being made with the Local Government Board for the Ministry to place large orders for articles required in connection with the Government's housing scheme—such articles as steel casements, locks, ironmongery, ranges, stoves, sinks, lavatory and sanitary equipment, fittings for gas and electric lighting, and many other things. Contractors would be well advised to get into communication with the Ministry of Munitions should they desire to obtain orders of this nature." Then, again, Mr. Churchill, speaking in the early part of this year, also said that "practically all the essential fittings were being standardized, including doors, windows, kitchen ranges, baths, bolts, locks, door-handles and general fittings—designs for which had been prepared and chosen; while arrangements were being made with the Ministry of Munitions to place orders for those standardised fittings and where practicable, existing munition factories and works will be utilized for the production of such fittings, with a view to providing employment for as many munition workers as possible.

Commenting upon these observations, Mr. McGeoch said it appeared to him as rather extraordinary that the Government should seek to bolster up a certain number of large munition works which had been brought into being for the purpose of war, instead of allowing these to be, as it were, demobilised, or given up immediately. If they had written off all the cost of these works in a short time it would have been a much better policy to pursue than trying to keep them going at the expense of legitimate manufacturers of these materials. He had no details of the scheme beyond those which had been offered by Mr. Churchill in his speeches, as to what munition works were going to receive these large orders and which employed labour which probably had never been engaged in that class of work before. Personally, he felt that a great injustice was being done, not only to manufacturers, but also to merchants who had hitherto been the legitimate distributors of all such goods. They all knew that there were a great many controlled firms in this country, but to a great extent these firms were allowed to carry on their business during the war just as in pre-war times—the only difference as far as he could see being that every week they had to send to the authorities a note of all orders received, and where private orders were in any way going to affect the Government contracts, they had to be curtailed to some extent. Otherwise, they were allowed to manage their business pretty much as they did in pre-war times, and he thought that that applied to the majority of controlled firms. They all knew that there were plenty of firms in the country who were thoroughly up-to-date and capable of producing all the articles required for housing, and, therefore, why should the Government now seek to start up and practically take the trade away from the firms who had provided the sinews of war for the country. It seemed to him that they were killing the goose that laid the golden egg to take contracts away from firms who were capable of carrying on large businesses, and thereby providing revenue for the country. One could not exactly see what the Government's motive was, but, as far as trade associations were concerned, he thought that they should try to prevent the policy suggested in the speech by Mr. Churchill. The worst feature was that when the Government started manufacturing in any direction, the question of cost became complicated—for they all knew that to carry on large works under private ownership meant that, besides the cost of production on articles, there were many other things to be taken into account; but when the Government ran these works many such things were not taken into account at all in the cost. Now, under the new housing scheme, the Local Government Board had appointed a chief commissioner in London and other district commissioners throughout the country to administer the scheme, and that was not going to be done for nothing. His own opinion—and he thought the meeting would share in this opinion—was that the Government should recognize legitimate manufacturers, merchants and distributors, and that they should simply give out the contracts all over the country in the usual way and with usual trading conditions. They should leave the work to be carried out by the contractors in the different localities, and this work should be thrown out to open competition and the contractors should be allowed to purchase their patterns from whoever they thought best. That would give all firms—big and small—a chance of participating in the trade, and it was very unfair indeed to contemplate taking away the business which really belonged to the legitimate traders and to firms who really required it. He agreed that it was a very wise action on the part of the Government to wish to raise the standard of housing, and they all must applaud such a movement, but they at the same time must object to the method now suggested, and if all the trade associations did not unite now they would probably find that the Government wanted to make them suits of clothing and everything else they possessed.

Ruskin Centenary.

The centenary of the birth of John Ruskin on Saturday will be observed by a public meeting, organised by the Ruskin Centenary Council, at the Royal Society of Arts, John-street, Adelphi, W.C. Lord Bryce will preside, and centenary addresses will be given. An exhibition of Ruskin's drawings, &c., will be held this autumn.

THE BUILDING TRADE.

THE NATIONAL FEDERATION OF BUILDING TRADES' EMPLOYERS OF GREAT BRITAIN AND IRELAND.

The Annual Meeting.

THE annual general meeting of this Federation was held on Wednesday of last week in the Central Building Trades' Employment Exchange, 13–16, Tavistock-street, Covent Garden. Mr. H. Willcock (Wolverhampton), the President, was in the chair, and there was an attendance of about 120 delegates.

Before the business was proceeded with, the President said he had the pleasure to announce that since the last meeting three of their members had received Royal honours—Sir James Carmichael, K.B.E., Sir Henry McLaughlin, K.B.E., and Mr. J. W. White, C.B.E. He would like to move that the Secretary be instructed to write a letter of congratulation to those gentlemen on the honours conferred upon them.

The motion was carried with acclamation.

The Annual Report.

The annual report, which was adopted, stated that the total number of local associations affiliated was upwards of 160, with an aggregate membership of about 6,000. The National Conciliation Board had sat seven times, and dealt with nine appeals, giving a decision in six cases. The Belgian Builders' Relief Fund was closed down as from the end of July last. The total amount raised and distributed to members of the Belgian Builders' Federation who were refugees in this country was £3,680 15s. The attention of members of the Federation was called to the Home Office Order, dated November 8, 1918, made by the Secretary of State under section 7 (1) of the Police, Factories, &c. (Miscellaneous Provisions) Act, 1916, in regard to Ambulance and First-Aid Arrangements at Saw Mills and Factories in which articles of wood were manufactured, which came into force on January 1, 1919. It applied to factories or parts of factories employing twenty-five or more persons, and called for the provision therein by the occupier, in readily accessible positions, of "First-Aid" boxes or cupboards in the proportion of at least one to every 150 persons. There were provisions as to what the "First-Aid" boxes should contain. In factories employing a total number of persons of 500 or over, the occupier is required to provide and maintain in good order an ambulance room, also a suitably constructed ambulance carriage, unless he had made arrangements for obtaining such a carriage, when required, from a hospital or other place in telephonic communication with the factory. In reckoning the number of persons employed, any department of the factory in which no machinery was used might be excluded. During the past few months the draft form of contract had been undergoing careful revision in consultation with counsel, and a final draft would be ready shortly. In this connection it was noted that the report of the Treasury Standing Committee on Co-ordination of Departmental Action in regard to Contracts (Colwyn Committee) made certain recommendations as to standardisation of contracts, which it was felt ought not to be allowed to pass unnoticed, and arrangements were in hand to bring the views of themselves and of the architects and surveyors to the notice of the Treasury.

Treasurer's Account.

Mr. A. J. Forsdike (Sheffield), in proposing the adoption of the accounts, said the income from subscriptions had amounted to £1,142 2s. 9d., from which had to be deducted the arrears of 1917, £325 9s., which reduced the total to £816 13s. He hoped that was the last time they would have any arrears when the accounts were presented. The next item of £109 12s. 6d., subscriptions due but not paid, December 31, 1918, brought the income for the year from subscriptions to £926 6s. 3d., as against £881 9s. in the previous twelve months. He thought that was a very meagre amount, and he hoped that his successor would have a much better statement to give the Federation. At the close of the year they had advanced £131 1s. 10d. to the Belgian Fund, but he was glad to say that a further £60 had since come in on that account. The reserve fund stood at £7,164, a decrease of about £300, although some £824 had been taken out of the fund during the year.

Mr. W. G. England (Barnsley) seconded the motion, and the accounts were adopted.

Builders and the King's Fund for the Disabled.

Mr. E. J. Brown (London) expressed disappointment at the small response which had been made to his appeal to the building trades on behalf of the King's Fund for the Disabled. He had hoped he would have received a very large number of small subscriptions from members of the Federation, but so far he had only received £1,020 from that source, and friends of his in London had contributed half of that sum. Were it not for the fact that a friend of his in London had sent him a magnificent donation of £1,000, the building trades would have made a very poor show indeed. He hoped that the matter would be taken up more vigorously by the Federation, and he would like many other associations to follow the example of Sheffield, where they had made the fund an Association matter.

Mr. S. Smethurst, J.P. (Oldham), said he believed the reason Mr. Brown had met with such a small response to his appeal was because the majority of people thought it was a scandal that the Government had resorted to voluntary contributions to carry out what was a national obligation.

Mr. F. L. Dove said that while fully agreeing with Mr. Smethurst he thought that they ought to do their best and make the Fund a success as far as regarded the building trade.

The matter then dropped.

The Subscription.

Mr. Forsdike, hon. treasurer, proposed, on behalf of the Council, that the subscription for the present year be fixed at the sum of 9d. per £100 of wages. He remarked that the Federation was entering upon a new era as regarded its subscription, in order that the finances might be put upon a proper basis. At first it was thought that 7d. in the £100 would be sufficient, but the Council had come to the conclusion that they must ask for 9d.

Mr. W. Moffat (Birmingham) seconded the proposition, which was carried.

On the motion of Mr. J. Good (Dublin), a vote of thanks was accorded Mr. Forsdike for his services as treasurer.

Compulsory Membership of Trade Organisations.

The secretary reported that the Council, at its meeting the previous day, passed the following resolution:—"That the recommendation from the Industrial Council upon the question of inclusion of all employers and workpeople in their respective associations be referred to the Administrative Council, with power to act."

Mr. J. M. Macfarlane (Manchester) moved that the resolution be approved.

Mr. W. C. Chambers (Leicester) seconded.

Mr. W. J. Renshaw (London) said he was sorry he was unable to be present at the meeting of the Council when the resolution was discussed. Although the Midland resolution upon which it was based only applied to employers, and sought to make membership a statutory obligation, in his view it was impossible to divorce the question of the employers from the employees. Of course he knew it was difficult for that Federation to attempt to legislate for a body that they did not represent, but he was anxious that they should consider the matter in relation to the employees, because in his view it also seriously affected the employers. The matter was discussed at a meeting of the Industrial Trades Parliament at Edinburgh, and at that meeting he felt forced to take a very decided view. Although they, as representing the London Association, accepted at Edinburgh the principle involved in the resolution, yet they considered that there ought to be certain safeguards, in order that the interests of the employers and the operatives should be protected. He laid down the following seven points as being things precedent to the acceptance of the conditions:—(1) That membership of an operative union shall carry with it the guarantee that the holder of a ticket is a craftsman. (2) The ability of the operative societies' executives to control their members and be responsible for the observance of agreements, not only in the letter, but also in the spirit. (3) If every man is forced to enter, should not the society guarantee that he will work with industry, and fulfil his duty to his employer, and give an adequate return for the wages paid? (4) It would be necessary for the various societies' rules to be carefully examined, to see that they were such that would work no hardship or injustice should men be compelled to join, that no victimisation should result (5) When membership is voluntary, it is not of great moment what exactly the rules and constitutions of the societies are, but the case is altogether different when compulsion obtains. (6) Every man has an inherent right to freedom, and that right cannot be destroyed by any act of, or agreement come to, between the employers and the operatives. The right will still exist, and may be used at the owner's discretion, unless the statutory obligation is imposed. (7) That, without proper safeguards, the proposal would destroy the freedom of the subject—an idea which we had been fighting for in the right of self-determination. He wanted to make quite sure, before these statutory conditions were imposed, that they could be worked without hardship or injustice resulting either to workmen or employers.

Mr. W. H. Nicholls (Gloucester) expressed the hope that special care would be taken by the representatives of the Federation in discussing the question at Manchester that they were not stampeded into any hasty action.

The Secretary pointed out that no action could be taken at Manchester. The position was that the Council and its Administrative Committee had referred to the adherent bodies the question of conferring as to what practical steps could be taken to give effect to the principle of both sides in the industry being fully organised. The Administrative Committee had taken the initiative in convening a conference, and each of the adherent bodies had been asked to send representatives. The matter was only mentioned there so that any expression of opinion the meeting liked to give on the question, might be at the disposition of the representatives of the Federation when they met at the Conference. After the Conference had met, its findings would have to go back to the Council for consideration, and if they involved anything in the nature of actual action, the proposition would have to be approved by the Federation as a whole before anything could be done.

Mr. H. T. Holloway (London) said he wished to emphasise the point that the Administrative Committee must not commit the Federation in any way until every part of it had had an opportunity of considering the matter. If they as

employers were to give up their freedom and join forces by treaty with the operatives they wanted to see that the bargain was a fair one.

Mr. S. Smethurst said he was present at a meeting addressed by Sir Eric Geddes the previous night when he said that the troubles in all trades were due to distrust and misunderstanding. He (Mr. Smethurst) hoped that the Builders' Parliament would set to work upon that question without delay and see if something definite could not be done. He might remind the Federation that it was not the operatives or the State who were forcing the question on. It had emanated from the employers, and personally he was afraid that the men's leaders were not sufficiently advanced to be able to agree to such a proposal.

After further discussion the resolution was agreed to in the following amended terms:—"That the recommendation from the Industrial Council upon the question of the inclusion of all employers and workpeople in their respective associations be referred to the Administrative Council with power to proceed further, and to report further before any binding action is taken."

The following resolution was on the agenda in the name of the Midland Centre:—"That this E.C. approves the principle that all firms employing building trade operatives should be members of one of the Federated Trade Associations, and should contribute to their working in direct proportion to the wages paid by them to such workpeople; and in view of the demands now made on the work of the federated bodies by the Government, in connection with general trade matters, lays down the further principle that such membership should be made by the Government a statutory requirement on all such firms."

The Secretary reported that the Council at its meeting on the previous day carried the resolution and referred it to the Administrative Committee with power to act.

Mr. W. Moffat, in proposing the resolution, said it seemed to him there was no half-way house between the present unsatisfactory position and a statutory obligation of membership. If the Federation trusted its Administrative Committee, let them consider the whole proposition and take any action they deemed necessary? The point for the Federation was whether or not they agreed upon the principle of the thing—did they or did they not think it was time to take steps to get things on a different plane?

Mr. A. J. Forsdike, in seconding the resolution, said he thought the time for being overtender with regard to those who were outside the Federation had passed. They knew what they suffered from people outside on a small scale in normal times, while during the war they had suffered severely from huge employers of labour who had had the ball at their feet and had helped the Government to force up prices. Many of them believed it was not possible by moral suasion to effect any great improvement in the existing condition of things, and that the time had come for compulsion in order that those outside the Federation should be brought in.

Mr. R. Charlesworth (Sheffield) asked whether the Council had considered the effect which the proposal would have on municipal bodies who had their own repairing staffs in the building industry.

Mr. R. A. Costain (Liverpool) said he had every confidence in the Administrative Council, but he wanted to suggest that they would have to do a good deal of educational work in the regional federations and in the local associations if the resolution was to be made effective.

Mr. Renshaw said he did not like the words "statutory obligation." If they put themselves under the heel of the Minister of Labour by a statutory obligation being imposed upon them voluntarily, they would have no excuse if perhaps lat r on labour in the hands of a truculent Labour Minister put other orders upon them in the same way as they had put orders upon employers in regard to wages and other conditions.

Mr. S. Smethurst said he quite agreed with Mr. Moffat, but he did not believe they were ever going to get Parliament to legislate in the direction contemplated. He rather favoured the suggestion which was made by Mr. White at the meeting on the previous day—that they should go to the Government and ask them only to put their contracts through the members of the Federation, because of the work they were asking the Federation to carry out.

Mr. Moffat said that if they had made up their minds that they wanted everybody in the Federation, what use was it asking the Government only to give contracts to employers who belonged to the Federation? He yielded to no one in his dislike to statutory obligations, but they were faced with the fact that they had had a good many of these statutory obligations put upon them for the benefit of the employees. If they could enter upon a statutory obligation which would be a benefit to themselves why should they not put aside their dislike to the phrase and take advantage of it? He did not believe there would be any difficulty in getting the principle put into practice in view of the trend of modern legislation as seen in the Registration of Business Names Act and other measures. It seemed to him that they had got a reasonable case to go to the Minister of Labour with and point out to him all those things, and ask that they be made the subject of a statutory requirement.

Ultimately, the resolution was carried, with the substitution of the words "to consider and report" for "with power to act."

Restriction of Output.

Mr. W. T. Ledgard (Leeds) proposed the following resolution from the Yorkshire Federation: "That the National Administrative Committee be requested to consider the desirability of approaching trade unions, either through the Building Industrial Parliament or otherwise, with a view to an understanding being arrived at with respect to the rates of wages conditional on the removal of all artificial restrictions on output and the introduction, under thoroughly efficient safeguards, of a system of output."

Mr. R. Charlesworth (Sheffield) seconded.

Mr. T. Foster remarked that in his opinion the question of how to increase output was one of the most important matters that had ever come before the Federation.

Mr. Forsdike said that he believed if builders took the trouble to ascertain the facts, they would find that in regard to brickwork the efficiency of the men had decreased 33 per cent. during the war. Of course, against that they had to put the fact that the younger men had been taken into the Army, but still, for all that, it was a very serious problem.

Mr. Brown said he feared that if the resolution was carried and the matter went to the Industrial Council, and became a national question, they would be faced with a demand from the operatives for a national rate of wages. He believed it was the fear of want of continuity of employment that was the great bugbear which they had to face in the building trade. If they could solve that question he felt sure the question of output would not be a serious one at all. He would like to see the matter dealt with locally rather than nationally.

Mr. Walter Lawrence (London) said he would like to make what some of them might consider a bold suggestion for the solution of the difficult problem of decreased output. He had given a good deal of thought and consideration to the subject of profit-sharing for the building industry. They had been told on many occasions that it was impossible to apply it. He absolutely and entirely disagreed with that opinion; in fact he would go so far as to say that until they could give the men a direct interest in the results of their labours he did not think they would be able to solve the problem. He had been told that it was impossible to apply profit-sharing to the building industry because of the casual employment in it, but he did not believe the difficulties were insuperable. Whether the matter went to the National Administrative Committee or the Builders Industrial Parliament, he hoped the suggestion he had thrown out would be carefully considered. He knew that the trade unions would not accept piecework or payment by results, but he thought they would probably view the question of profit-sharing more favourably. They had only got to get their consent to the principle of profit sharing, when there were several—should he call them wild spirits, in the building trade in London who were prepared to put a scheme into operation, and who would be content to stand or fall by the result. If they went down he supposed they would be laughed at for their pains, but on the other hand, if they succeeded the natural result would be that their brother builders would follow in their footsteps as rapidly as they possibly could. In that direction he believed, lay increased output, and not only so, but it would create a much better feeling throughout the industry than had yet existed.

Mr. Dove remarked that he scarcely thought the question was ripe enough for the Industrial Parliament to deal with, although it would have to go to them ultimately. He did not think the position was so bad as some people thought, and his own feeling was that it was possible by regional conferences between the representatives of the operatives and the employers' representatives to get what they desired. With regard to profit-sharing, personally he was whole-heartedly in sympathy with Mr. Lawrence, and he believed that some such scheme was not only practicable but one which, if carried out, would be of advantage to all sections of the trade and to the community generally.

The resolution was carried.

Lump Sum Contracts.

The Secretary said that demands were being made by the Government Departments for tenders for building materials intended for use in the Government building schemes. The question was considered by the Executive Committee on the previous day and as a matter of urgency they were trying to get the Minister of Munitions to receive a deputation on the subject. In the meantime members of the Federation were requested not to send in any tenders.

The action of the Committee was approved, and the following resolution of the Council was agreed to:—"That this meeting is of opinion that under present conditions it is not advisable for members to give lump-sum contracts as in pre-war days, and that contracts should be only undertaken either in accordance with the recommendation of the Colwyn Committee, which recommends payment to the contractor on an agreed fee or percentage on estimated cost or alternatively that a probation clause is inserted providing for increased or decreased costs of labour and materials after date of sending in tenders, and that printed slips be attached to tenders to this effect, care being taken that the reservation be inserted in the contract document."

Organisation and Propaganda Work.

The Secretary said that this question had been raised in a letter from the South Wales Federation asking the Federation to do something in the way of increasing the membership. The Administrative Council decided that the question had better be dealt with by the Federation at its half-yearly meeting. The matter was considered at the meeting of the Council on the previous day, when the following motion was carried:—"That a careful consideration of the present condition of the National Federation shows the urgent necessity for a thoughtfully-prepared plan of organisation, and possibly the engagement of a permanent organiser for the Federation. We ask the Administrative Committee to give this their immediate attention and to report to the next half-yearly meeting."

The resolution was agreed to on the motion of Mr. S. Ambrose (Bath), seconded by Mr. Smethurst.

The Demobilisation of Apprentices.

The Secretary reported the receipt of letters from Hull, Yorkshire, the Midland Centre and the Northern Counties Federation on the subject of the demobilisation of apprentices, animadverting on the financial proposals of the Government in the matter.

In the discussion which ensued, several speakers complained of the action of the Government in asking the advice and opinion of the Federation upon this and other questions, and then totally ignoring the advice given them.

Mr. Chessum (London) said that many of them had wasted their time sitting upon various local advisory committees, because, after arriving at decisions which were the outcome of technical knowledge and experience, those decisions were often treated with cool indifference by Government officials.

Mr. T. Foster said they had a glaring instance of the way the Government treated them in the Carmichael report. Sir James Carmichael and his Committee were two years preparing their report, and then at the end the whole matter was coolly turned down because one or two Government departments did not agree with the findings of the Committee. Unless they could have some assurance that in all future matters, when the Government approached the building trade for advice, they were prepared to take it or at least give it serious consideration, the Federation might as well refuse to have anything to do with them.

The following resolutions were then agreed to:—(1) "That in the opinion of this meeting of the National Federation of Building Trades' Employers, the financial proposals of the Government with regard to the completion of the indentures of demobilised apprentices are totally insufficient and inadequate and that Mr. Brown be requested to bring this resolution before the Resettlement Committee of the Ministry of Labour." (2) "That this meeting protests most emphatically against the practice of the Government in coming to decisions upon matters affecting the building trades before consulting with and taking advantage of the advice of the special bodies which have been set up by the Government for that very purpose; and that a copy of this resolution be sent to the Ministry of Labour."

Selection of Officers.

The Secretary said that the Council had nominated Mr. F. L. Dove as President. In the ordinary course their choice would have fallen upon Mr. S. Easten, the senior Vice-President but that gentleman had written them a letter from a nursing home at Bournemouth stating that his doctor had told him that he must give up work for some months. Under the circumstances Mr. Easten had asked the Council not to nominate him for the position of President. The Council had decided to ask that Mr. Easten should continue as senior Vice-President for another year; that Mr. A. J. Forsdike, their Treasurer, should become junior Vice-President; Mr. John Good, Hon. Treasurer, and Mr. W. H. Nicholls (Gloucester) and Mr. J. Croad (Gosport), Auditors.

The Chairman, in proposing the election of Mr. Dove as President, said that that gentleman had acted as President of the London Master Builders' Association, and he did not think they wanted a higher qualification for the President of the Federation.

Mr. Brown seconded the nomination, which was carried with enthusiasm.

Mr. Dove, having been invested with the chain of office, then took the chair. In the course of his remarks, he proposed a vote of thanks to Mr. Willcock for the way he had carried out his duties. The year had been a very strenuous and arduous one, but Mr. Willcock had never spared himself when the good of the Federation was in question, and he was informed that their late President had not missed a single meeting last year. Coupled with their thanks he had to move that the name of Mr. Willcock be added to their list of Vice-Presidents.

The motion was carried with acclamation.

Mr. Willcock thanked the meeting. It would have been absolutely impossible for him to have carried out his duties without the assistance he had received from the officers of the Federation. and also from Mr. White, their Secretary, and the staff. Mr. White was a tower of strength to any gentleman who occupied the position of President, and he would like to propose a vote of thanks to the Secretary and his staff for the way in which they had carried out their work during the past year.

Mr. Woods (Bolton) seconded the vote, which was carried with enthusiasm.

Mr. White, in reply, said it was true that the labours of himself and the staff—in fact, all connected with the Federation—had been unusually strenuous last year. He trusted they would be lightened somewhat in the coming twelve months. He thought it was only right to say that he had received splendid help from some individual members of the Federation, particularly Mr. Moffat and Mr. Woods and Mr. Elvins. The work that the two first-named gentlemen had done upon contracts, and Mr. Elvins' upon the revision of the model rules for local associations, had been of a most admirable character, and they deserved a very hearty vote of thanks.

The remaining officers were then elected in accordance with the nominations of the Council.

It was decided to accept the invitation of Mr. Renshaw, in the name of the London Association, to hold the summer meeting in the Metropolis.

The proceedings then terminated.

NEW ENGINEERING INDUSTRIES.

WE have received from the Ministry of Reconstruction an expert's survey of post-war openings in the Engineering trades. A committee was appointed by Dr. Addison in December, 1917, consisting of sixteen leading engineers, under the chairmanship of the Hon. H. D. McLaren, O.B.E., M.P., with a Labour panel of eleven leading trade unionists, under Sir Claude Schuster, to advise on labour questions likely to arise in setting up new industries. This committee has done an immense amount of invaluable work, and the information compiled, together with the recommendations, should be most helpful in tiding over the troublous times ahead of us if carried out at once. The following are some of the articles dealt with and at present imported in large quantities, which it is urged should be solely made at home for our own consumption and also for export:—(1) Agricultural machinery; (2) hollow-ware, sheet metal and pressed work; (3) electrical plant; (4) machine tools; (5) miscellaneous machinery; (6) scientific apparatus; (7) textile machinery (subdivided into eight branch committees); (8) light section rolling and extension; (9) wire drawing machinery; (10) printing machinery; (11) printers' general machinery; (12) paper making machinery; (13) leather making machinery; (14) aircraft; (15) motor industry. Special branch committees were set up to deal with these particular groups of articles, and they have agreed that *bona fide* engineers interested in the manufacture in Britain of any particular article may be put in touch with the chairman of the branch committee concerned to obtain such information as is available, and advice as to their prospects in entering upon a new field of industry. Such enquirers will be able to obtain at the Ministry of Reconstruction all the information made available by the branch committee, except that which is of a confidential nature.

Competitions, Contracts, &c.

For some contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number.** Contracts vi; Competitions —; Public Appointments —; Sales by Auction xi. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

BUILDING AND PAINTING.

FEBRUARY 13.—**Birkenhead.**—FLOUR MILLS.—Tenders are invited for the completion of flour mills at Birkenhead for Messrs. Spillers & Bakers, Ltd. Quantities of Messrs. Gelder & Kitchen, architect, 120, Alfred Gelder-street, Hull. Deposit £2 2s.

FEBRUARY 28.—**Isle of Islay.**—WALLS.—Tenders are invited for the building of enclosing walls at the cemetery for American soldiers at Kilchoman. Specifications of Mr. D. M. Mackinnon, County Buildings, Oban.

FEBRUARY 14.—**Southend-on-Sea.**—PAINTING.—The T.C. invites tenders for the interior cleaning and painting of the pier pavilion. Specifications of the Borough Engineer, Town Hall, Southend-on-Sea. Deposit, £1 1s.

FEBRUARY 19.—**Derby, &c.**—PAINTING, &C.—The Directors of the Midland Railway Company invite tenders for the following cleaning and painting works:—(1) Loco. depots at Leicester and West Bridge; (2) Loco. Depots at Burton and Coalville; (3) Station buildings, &c., Gospel Oak to Wanstead Park; (4) Station buildings, &c., Darfield to Park Gate and Rawmarsh; (5) Station buildings, &c., Withington to Hazel Grove; (6) Passenger, goods, and locomotive buildings, &c., at Skipton; (7) Leeds and Hunslet passenger stations, &c. Specifications at the Engineer's Office, Derby Station.

FEBRUARY 19.—**Huntingdon.**—SHEDDING.—The Huntingdonshire Agricultural Society invites tenders for the erection of shedding at the annual shows for the next four years. Forms of tender of Mr. A. G. Dilley, Secretary, Market Hill, Huntingdon.

*FEBRUARY 19.—**London.**—The Metropolitan Asylums Board invites separate tenders for (1) external painting work, (2) forming new entrance to the Central Stores. Drawings, specifications, &c., may be inspected at the Office of the Board, Embankment, E.C.

FEBRUARY 22.—**Westgate-on-Sea.**—PAINTING.—The Isle of Thanet R.D.C. invites tenders for the painting of seats, shelters, band stand and conveniences at Westgate-on-Sea. Specifications of the Surveyor, Station-road, Birchington.

FURNITURE, MATERIALS, etc.

FEBRUARY 10.—**Dover.**—ROAD MATERIALS.—The R.D.C. invites tenders for road materials. Particulars of Mr. C. W. Whitewood, surveyor, Kearsney, near Dover.

FEBRUARY 11.—**Maldens and Coombe.**—MATERIALS.—The U.D.C. invites tenders for road and other materials for six months. Forms of tender of the Surveyor, Council Offices, New Malden.

FEBRUARY 11.—**Southall-Norwood.**—MATERIALS.—Tenders are invited by the U.D.C. for road and other materials. Forms of tender of Mr. R. Brown, surveyor, Town Hall, Southall.

FEBRUARY 14.—**Bexhill.**—TAR, &C.—The Corporation invites tenders for tar, tarvic, &c. Mr. G. Ball, borough engineer, Town Hall, Bexhill.

FEBRUARY 14.—**Newmarket.**—ROAD MATERIALS.—The Newmarket Urban District Council invite tenders for granite and slag. Forms of tender from Mr. W. H. Eley, Surveyor, Town Hall, Newmarket.

FEBRUARY 15.—**Dorking.**—ROAD MATERIAL.—The U.D.C. invites tenders for tarred slag and refined tar. Forms of tender of Mr. S. S. Gettings, surveyor, Council Office, Dorking.

FEBRUARY 15.—**Rotherham.**—MATERIALS.—The Corporation invites tenders for one year's supply of road materials, pipes, oil, &c. Forms of tender of Mr. J. Salvin, acting borough engineer, Town Hall, Rotherham.

FEBRUARY 15.—**Stafford.**—MATERIALS.—The Corporation invites tenders for the supply of various materials, including timber, water fittings, pipes, &c. Form of tender of Mr. W. Plant, Borough Engineer, Stafford.

FEBRUARY 15.—**Stoke-on-Trent.**—MATERIALS.—The Corporation invites tenders for materials, including cement, bricks, pipes, and gullies, tools, &c. Forms of tender of the borough surveyor, Town Hall, Stoke-on-Trent.

FEBRUARY 17.—**Belfast.**—RAILWAY STORES.—Tenders are invited by the Belfast and County Down Railway Co. for the supply of stores for 12 months. Forms of tender of Mr. H. E. Mellor, secretary, Belfast.

FEBRUARY 18.—**Wallasey.**—RAILWAY MATERIALS.—The Wallasey Corporation invite tenders for the following materials required for their railway siding renewals at the Gas and Water Works: About 25 tons F.B. rails (70 lb. per yard), four special crossings, four pairs of points, 500 creosoted sleepers, fish-plates, bolts, dogs, &c. Specification of the gas and water engineer, Mr. J. H. Crowther, Limekiln-lane, Wallasey, Cheshire.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Accrington	1/5½	1/5½	1/5½	1/5½	1/5½	1/6½	1/3½§	1/1½§	1/1½§	1/1½§
Altrincham	1/6½	1/6½	1/6½	1/6½	1/5½	1/7½	1/6½	1/2½	1/2½	1/2½§
Ashton-under-Lyne	1/6½	1/6½	1/6½	1/6½	1/5½	1/7½	1/6½	1/2½	1/2½§	1/2½§
Barnsley	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	11	1/2½	1/2½	1/2½
Barrow-in-Furness	1/3½	1/4	1/4	1/3½	1/3½	1/3½	1/3½	1/1	1/1	1/1
Barry	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Bath	1/1	1/1	1/1	1/0½	10/½	1/1	1/-	10½	10½	10½
Bedford	1/1	1/1	1/1	1/1	1/1	1/1	10	10	10	10
Birkenhead	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/6½	1/4½§	1 4½§	1/4½§
Birmingham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/2½	1/2½	1/2½
Bishop Auckland	1/2½	1/2½	1/4	1/2½	1/2½	1/4½	11	11	11	11
Blackburn	1/5½	1/5½	1/5½	1/5½	1/5½	1/6½	1/5½	1/1½§	1/1½	1/1½§
Blackpool	1/-	1/4	1/4	10½	8½	1/1‡‡	1/2½	8	8	8
Bolton	1/6½	1/6½	1/6½	1/5½	1/5½	1/7½	1/6½	1/-§	1/-§	1/1½
Bournemouth	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Bradford	1/4½	1/4½	1/4	1/4½	1/5	1/5	1/3	1/2	1/2	1/2
Bridgwater	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Brighton	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	11	11	11
Bristol	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Burnley	1/5½	1/5½	1/5½	1/5½	1/5½	1/6½	1/5½	1/1½§	1/ §§	1/1½§
Burton-on-Trent	1/2	1/2	1/2	1/2	1/2	1/2	1/1½	11½	11½	11½
Bury	1/6½	1/6½	1/6½	1/5½	1/5½	1/7½	1/6½	1/1½§	1/2½	1/2½
Cambridge	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/-	10½	10½	10½
Cardiff	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Chatham	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	11‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Chelmsford	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	11	11	11	11
Cheltenham	1/3½	1/3½	1/3½	1/3½	1/0½	1/0½	1/0½	10½	10½	10½
Chester	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/-§	1/-§	1/-§
Chesterfield	1/-	1/2	1/1	11	10	11	1/-	8-8½	8-8½	8-8½
Colchester	11	11½	11½	1/-	11	1/-	9½	8½	8½	8½
Coventry	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/0½	1/0½	1/1
Crewe	1/2	1/2	1/3½	1/2	1/2	1/2	1/0½	8	8	8
Darlington	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2	1/0½	1/0½	1/0½
Derby	1/2	1/2	1/2	1/2	1/2	1/2	1/0½	11	11	11½
Doncaster	1/3	1/3	1/3	1/3	1/3	1/3	1/1	1/0½	1/0½	1/0½
Dudley	1/2	1/2	1/2	1/2	1/2	1/3	1/1	11	11	11½
Durham	1/2	1/2	1/1½	1/2	1/1½	1/10	1/0½	9	9	9
East Glam. and Mon. Valleys	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Exeter	1/-	1/-	1/-	1/-	1/-	1/0½	11	10	10	10
Folkestone	1/-	1/-	1/-	1/-	1/-	1/-	10	9	9	9
Gloucester	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10½	10½	10½
Grantham	9½	10	9½	9½	10	8½	8	8	7½	8
Grays	—	1/-	1/-	—	—	1/-	10½	—	10	10
Grimsby	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/2½	1/-§	1/-§	1/-§
Great Yarmouth	10	10	10	10	10	10	8½	7	7	7
Guildford	1/1	1/-	1/-	1/1	—	1/1	11½	9½	9½	10
Halifax	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/-	1/-	1/-
Harrogate	1/0½	1/2	1/-	1/-	1/-	1/5	1/1	10	10	10
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2	1/3½§	1/3½§	1/3½§
Hastings	11	11	11	11	11	11	10	9	9	9
Hereford	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10½	10½	10½
Huddersfield	1/6½§	1/3½	1/5½	1/3	1/3	1/2	1/3	1/3½	1/3	1/3½
Hull	1/5½§	1/5½§	1/5½§	1/5½§	1/5½§	1/5½§	1/3	1/3½§	1/3½§	1/3½§
Ipswich	1/1½	1/1½	1/1½	1/2	1/2	1/2½	1/0	11	11	11
Lancaster	1/1½	1/3	1/2	1/1½	1/1½	1/2	1/1½	11	11	11
Leamington Spa	11½	1/1½	1/1½	11½	11½	1/1½	1/0½	10½	10½	10½
Leeds	1/4½	1/4½	1/4	1/4	1/4½‡‡	1/5	1/3	1/1½	1/1½	1/2½
Leicester	1/2	1/2	1/2	1/2	1/2	1/2	1/1	11½	11½	1/-
Lincoln	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3	10½	10	10½
Liverpool	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/6½	1/4½§	1/4½§	1/4½§
Llanelly	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
London	1/5	1/5	1/5	1/5	—	1/5½	1/2½	1/1½	1/1½	1/1½
Loughborough	1/3½§	1/2	1/2	1/3½§	1/3½§	1/2	1/1	1/0½§	11½§	1/0½§
Luton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	11	11	11
Maidstone	1/1	1/1	1/1	10	10	1/1	1/-	10	10	10
Manchester	1/6½	1/6½	1/6½	1/6½	1/5½	1/7½	1/6½	1/2½	1/2½§	1/2½§
Mansfield	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	10½
Merthyr Tydfil	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2	1/3½§	1/3½§	1/3½§
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/3½§	1/3½§	1/3½§
Newport, Mon.	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Northampton	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/0½	1/0½	1/0½
Norwich	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Nottingham	1/4	1/4	1/4	1/4	1/4	1/4½	1/2½	1/1½	1/1½	1/2
Oldham	1/6½	1/6½	1/6½	1/6½	1/5½	1/7½	1/7½	1/2½§	1/2½§	1/3½
Oxford	1/0½	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Plymouth	1/4	1/4	1/4	1/4	1/4	1/4	1/1½	11	11	11
Pontypridd	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Portsmouth	1/-	1/-	1/-	1/-	1/-	11	10	9½	9½	9½
Preston	1/4½	1/4½	1/4	1/3½	1/3	1/4	1/3½	1/0½	1/0½	1/0½
Reading	1/1	1/1	1/1	1/1½	1/2	1/1	11½	11	10½	10½
Rochdale	1/6½	1/6½	1/6½	1/6½	1/5½	1/7½	1/6½	1/2½§	1/2½§	1/2½§
Rochester	10½‡‡	11‡‡	11‡‡	11‡‡	11‡‡	11‡‡	9½‡‡	8‡‡	8‡‡	8‡‡
Rugby	1/1½	1/1½	1/1½	1/1½	1/1½	1/1½	1/0½	10½	10½	11½
St. Albans	1/-	1/-	1/2	1/-	1/-	1/-	10½	9	9	9
St. Helen's	1/6	1/6	1/6	1/6	1/6	1/6	1/3	11½	11½	11½
Scarborough	1/1	1/1	1/1	1/1	1/1	1/-	1/1	10	10	10
Sheffield	1/5½	1/5½	1/5½	1/4½	1/4½	1/5	1/3	1/1½	1/1½	1/1½
Shrewsbury	1/3	1/3	1/3	1/3	1/3	1/2	1/-	1/-	11	1/-
Southampton	1/1	1/1	1/1	1/1	1/1	1/1	1/-	10½	10½	10½
Southend-on-Sea	10	10	10	10	P'cework	10	9	8	8	8
Southport	1/4	1/4½	1/5	1/4	1/4	1/4	1/4	1/-	1/-	1/-
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2	1/3½§	1/3½§	1/3½§
Stockport	1/6½	1/6½	1/6½	1/6½	1/5½	1/7½	1/6½	1/2½§	1/2½§	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	—	1/3½§	1/3½§	1/3½§
Stoke-on-Trent	1/2	1/2½	1/2	1/2	1/2	1/1½	1/1½	11½	11½	11½
Stroud	11½	11½	11½	11½	11½	11½	11	9½	9½	9½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/3½§	1/3½§	1/3½§
Swansea	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/3	1/3	1/3
Taunton	1/-	1/-	1/-	1/-	1/-	1/-	11	9½	9½	9½
Torquay	1/-	1/-	1/-	1/-	1/-	1/-	1/-	10	10	10
Wakefield	1/2½§	1/3½	1/3	1/2½§	1/2½§	1/3½	1/1	11½	11½	11½
Walsall	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½	1/1	1/1	1/1½
Warrington	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½§	1/2½§	1/3½
West Bromwich	1/3½	1/3½	1/3½	1/4	1/3½	1/3	1/1½	1/0½	1/0½	1/0½
Wigan	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2½§	1/2½§	1/2½§
Windsor	1/4	1/4	1/4	1/4	1/4	1/4	1/2½	1/0½	1/0½	1/0½
Wolverhampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/2½	1/1½	1/1½	1/1½
Worcester	1/-	1/-	1 -	1/-	1/-	1/-	10	10½	10½	10½
York	1/2§	1/2§	1/2§	1/2§	1/-	1/-	11	11§§	11§§	11§§

The Masons' rate given is for bankers: fixers usually ½d. per hour extra. * War bonus of 2s. per week granted † War bonus of 3s. per week granted. ‡ War bonus of 3s. 6d. per week granted. ‡‡ War bonus of 5s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include the 12½ per cent. bonus. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. bonus.—ED.]

*FEBRUARY 18.—**London.**—The Central London Building Co., Ltd., require tenders for the supply of 100,000 single rough stocks.—Address, as above, to 116, Judd-street, St. Pancras, W.C. 1.

*FEBRUARY 18.—**London.**—The Central London Building Co. Ltd., require tenders for the supply of one million Fletton bricks.—Address, as above, to 116, Judd-street, St. Pancras, W.C. 1.

FEBRUARY 19.—**Richmond (Surrey).**—MATERIALS.—The T.C. invite tenders for all kinds of materials. Particulars of Mr. J. H. Brierley, borough surveyor, Richmond, Surrey.

FEBRUARY 20.—**Wetherby.**—ROAD MATERIALS.—The Wetherby Rural District Council invite tenders for the supply of clean slag, granite, tar-macadam, and cob-limestone. Forms of tender from the surveyor, Mr. A. Suttel, Council Offices, Wetherby.

FEBRUARY 26.—**Durham.**—STEAM ROLLING AND MATERIALS.—The Durham County Council invite tenders for steam rolling and for road materials and tools. Forms of tender of Mr. A. E. Brookes, County Surveyor, Shire Hall, Durham.

NO DATE.—**Ramsgate.**—The Proprietors of the Ramsgate Promenade Pier invite tenders for the purchase of the salvage of the fire of the pier, together with lease. Full particulars and forms of tender can be obtained from Messrs. W. Norris & Co., Solicitors, 8 and 9, Martin's-lane, Cannon-street, E.C.

NO DATE.—**Wakefield.**—BUILDING MATERIALS.—Manufacturers, &c., are invited to submit price lists, catalogues, &c., to Mr. Louis J. Newton, County Quantity Surveyor, County Hall, Wakefield.

ENGINEERING, IRON AND STEEL.

FEBRUARY 28.—**Lisbon.**—ARSENAL.—For construction of naval arsenal on south bank of the Tejo. Notices regarding the contract can be consulted at the Department of Overseas Trade, 73, Basinghall-street, E.C.

ROAD, SANITARY, AND WATER WORKS.

FEBRUARY 10.—**Waltham Abbey.**—TAR SPRAYING.—The U.D.C. invites tenders for tar spraying 60,000 super yards of roads. Forms of tender of Mr. W. C. Holloway, surveyor, Town Hall, Waltham Abbey.

FEBRUARY 11.—**Southall-Norwood.**—STREET WORKS.—The U.D.C. invites tenders for making up Hortus-road. Specification of Mr. R. Brown, surveyor, Town Hall, Southall, Norwood.

FEBRUARY 13.—**Hemsworth.**—ROADS.—The R.D.C. of Hemsworth invites tenders for the making of a new footpath between the Council School and the Roman Catholic School at Grimethorpe, near Barnsley. Specification from the surveyor, Mr. T. H. Richardson, Hemsworth, near Wakefield.

FEBRUARY 19.—**Rowley Regis.**—DRAINAGE. &c.—The U.D.C. of Rowley Regis invites tenders for drainage raising level of land, fencing, path-forming, erection of tool-house, &c., and generally forming and preparing for burial purposes a part of the site purchased for a cemetery. Specifications of Mr. Daniel Wright, Clerk, Council House, Old Hill, Staffordshire.

*FEBRUARY 26.—**London.**—ROAD MATERIALS.—The Commissioners of H.M. Works, etc., are prepared to receive tenders for the supply of road materials for one year. Forms of tender and all particulars may be obtained on application to the Director of Contracts at H.M. Office of Works, Storey's-gate, Westminster, S.W. 1.

Auction Sales.

*FEBRUARY 19.—**London.**—Freehold building site in Little Britain and Montague-court will be sold by Messrs. Edwin Fox, Burnett and Baddeley at Winchester House, Old Broad-street, E.C. Particulars of Messrs. Russell, Son & Fisher, Solicitors, 3, Serjeants-inn, E.C. 4, and of the Auctioneers, 12, Abchurch-lane, E.C. 4.

Competitions.

*NO DATE.—**Worcester.**—The City Council of Worcester invite competitive plans for laying out the Northwick Park site. Conditions, &c., on application to the City Engineer, Guildhall, Worcester.

*NO DATE.—**Newcastle-upon-Tyne.**—The Housing Committee of the Newcastle-upon-Tyne Corporation are prepared to receive competitive designs for the laying out on garden area lines of a portion of their Walker Estate. Premiums of £100, £50, and £25. Conditions, &c., from the Town Clerk.

Electrical Engineers' War Memorial.

Upwards of 130 members of the Institution of Electrical Engineers have fallen in the war and many others are broken and disabled. The Electrical Engineers' War Memorial Fund has been initiated to preserve the memory of those who have died and to help the wounded and disabled, and it is proposed that the Memorial should take the form of—

(1) A permanent record in the Institution building in the form of a bronze memorial.

(2) A fund for the following purposes: To assist the wounded and disabled; to provide help to the families and dependents of the killed and wounded; to provide for the education of the children of those who have been killed or permanently disabled.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:— T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ARUNDEL.—The Duke of Norfolk's gift of £500 to Arundel, in celebration of the armistice, is to head the list of local subscriptions for a war memorial, which will probably take the form of two dwellings for wounded soldiers and their dependents.

ATHLONE.—The cost of the proposed housing scheme for Athlone is estimated by Mr. P. O'Loughlin, borough engineer, at £227,150. The scheme is divided into two sections, the first comprising a better class house, costing about £750. It is proposed to erect 134 houses of this class, the total cost being estimated at £100,500. The second section deals with a smaller house, to cost £425, 298 of which will be erected at £126,650.

BATH.—Plans have been passed for a timber shed, Bellott's-road; addition to firewood depot, 12, Green-park Mews, and rear of 29, Green-park; and a machine-shop, Avonbank Works, Midland-road.

BELFORD.—Belford is to erect a hall and institute as its war memorial. On the walls, in letters of gold, will be the names of the fallen from the district; in letters of silver, names of all wounded; and thirdly, names of local men who fought in the world's war.

BLACKPOOL.—Plans passed by T.C.: Mr. R. Webster, two houses, Kirkham-avenue; Mr. J. Dugdale, two houses, Kirkham-avenue; Messrs. R. Fielding & Son, two houses, Warreck Hill-road; Mr. E. Stern, additions 4, Brighton-parade; Mr. E. Adamson, addition and alterations, 58, Bolton-street, South Shore; Blackpool Co-operative Society, alterations, Sheppard-street; Halifax Building Society, alterations, 19–21, Clifton street; Mr. J. Heap, greenhouse, 29, Condor-grove; Mr. J. Bickerstaffe, alterations to greenhouse, St. Anne's-road and Lightwood-avenue.

BOOTLE.—The post-war housing scheme of the T.C. will necessitate the provision of a new elementary school near the working-men's dwellings which are to be erected at Orrell, and the Education Committee has decided to purchase from the Earl of Sefton 8,620 square yards of land near the junction of Moss-lane and Linacre-lane at a price of 4s. per yard, for the establishment of buidings to accommodate about 1,000 scholars.

BOSWORTH.—Plans passed by the R.D.C.: Ten cottages on an estate at Market Bosworth, for Mr. F. S. Freckleton, of Narborough Wood Farm; and a factory at Ratby for Messrs. Crick & Co.

BRIDLINGTON.—Plans passed: Alterations, Queen's Hotel, High-street, for Shaw's Executors; sanitary alterations, Black Lion Hotel, for Messrs. Joshua Tetley & Sons, Leeds; garage, Bay Works, Carr-lane, for Mr. S. E. Hadfield. Mr. M. B. Parkin, architect, has a plan before the committee for alterations to shop premises, at 31, King-street and Chapel-street.

BRISTOL.—A L.G.B. inquiry has been held by Mr George L. Pepler, F.S.I., respecting the application of the Corporation to borrow money for the purchase of land at Shirehampton, Sea Mills, Horfield, Fishponds, St. George, Knowle, Bedminster, and Bedminster Down for the erection of 5,000 houses.

BRYNMAWR.—The U.D.C. has appointed Mr. H. Walters, Beaufort, as architect and surveyor for the erection of 300 houses.

CAMBERWELL.—Camberwell has decided that its war memorial shall be a central meeting-place, including club and workshops, for sailors and soldiers, in which will be a full record of the part played by Camberwell in the war.

CHAGFORD.—It is proposed to erect a parish hall as a thankoffering for peace.

CHELMSFORD.—Plans passed by T.C.: Cycle-shed, Arc Works, Writtle-road, for Messrs. Crompton & Co.; store, Henry-road, for the Hoffmann Manufacturing Co.; shop front, High-street, for Messrs. W. G. Webber; A plan of alterations to 87, High-street, for Messrs Lennards, Ltd., is before the Committee.

CONSETT.—The housing scheme proposed to be undertaken by the U.D.C. contemplates in the immediate future to erect 500 houses, while a further 300 will be built later on to satisfy the requirements of the growing population. The 500 dwellings will be semi-detached, and will consist of four, five and six rooms; and will mostly be fitted with bath-rooms, each house having a large or small garden, according to requirements. Mr. Fred Hargreaves, surveyor, has already prepared the necessary plans, and the Council are negotiating with the Consett Iron Co., Ltd., for suitable sites, in the Templetown, Delves-lane and Castleside-road areas. As these localities are in the jurisdiction of Lanchester Rural Area, it is intended to make application to the L.G.B. for their transfer, along with the Villa Real suburb, into the urban district.

DALKEITH.—The L.G.B. has intimated that it is prepared to approve the site of Elmfield Park, extending to about 6 acres, for a commencement of a housing scheme, provided that the Local Authority obtains an option over an additional 14 acres, comprising garden grounds, to the east of the park in question. The Town Clerk has communicated with the Duke of Buccleuch to ascertain upon what terms he would grant an option over the gardens referred to. It is contemplated that 50 houses would first be erected, and probably afterwards the number would be increased to 200.

DOVER.—An expenditure of about £150,000 is involved in the public works proposed by the Corporation. They include the completion of the pier district improvement and the housing schemes which were stopped by the war. The proposals were put before the L.G.B. inspector last week.

DUDLEY.—Plans passed by T.C.: House, Oakham-road, for Mrs. M. L. Hadley; additions, 15, Hale-street, for Mrs. A. Hedges; new factory and offices, Trundle-road, for Messrs. J. Douglas, Son & Co.; rebuilding of the "Bird in Hand," Chapel-street, for the Wolverhampton and Dudley Breweries, Ltd.

DUNDEE.—There is a proposal to start engineering works in the city for the manufacture of chocolate machinery. Prior to the war, this was an entirely German industry. The ground desired extends to about 2 0 poles and is situated in East Dock-street.

EAST HAM.—Plans passed: Lavatories, Pontell-road, for Mr. W. S. Luton.

EDINBURGH.—In view of the increased demand, a Sub-Committee of the Plans and Works Committee has recommended that the wash-houses at Lochrin and M'Leod-street should be extended. The probable cost of each extension is £1,200.

EVESHAM.—The R.D.C. has bought 18 acres of land at Cleeve Prior for cottage building.

FRAMLINGHAM.—A pedestal of Portland stone or granite, surmounted by the figure of a soldier in bronze, is to be placed on the Market-hill as a war memorial.

GLASGOW.—Linings granted: Alley & M'Lellan, Ltd., Sentinel Works, Polmadie, to erect a transformer house in Jessie-street and extend their valve department in Polmadie-road and Hamilton-street; A. & J. Main & Co., Ltd., Clydesdale Iron-works, Possilpark, to erect a millwright's shop in Hobden-street; David Bennie & Sons, Ltd., Star Works, to reconstruct roof of rolling mill at 60, Hobden-street; the Icco Proofing Co., Ltd., Netherton Works, Anniesland, to add to their works; Stewart & Mackenzie, Ltd., engineers, Riverford-road, Pollokshaws, to erect a foundry there; W. & J. M'Lintock, manufacturing confectioners, 269, South York-street, to alter and extend their jam factory; W. & J. Bowie, dyers, Strathclyde-street, to add to their works; British Petroleum Co., Ltd., 22, Fenchurch-street, London, to erect oil stores at Canal-street; Cochrane, Morgan & Co., Ltd., engineers, Woodville-street, Govan, to erect engine works there.——The Glasgow Steel Roofing Co. Ltd., Possilpark, after conferences with their men, have decided to adopt as a war memorial a scheme for an institute, to be provided by the company on their own grounds, and to be organized and operated by the workers as a social club.

GOLCER.—The U.D.C. has adopted a scheme for the building of 100 workmen's houses.

HARROGATE.—It has been decided to erect a Y.M.C.A. building as a war memorial at a cost of £3,000.——At the annual meeting of the shareholders of the Grand Opera House, the question of building a new theatre at the junction of Station-walk and East-parade was discussed. The matter was adjourned for a time.

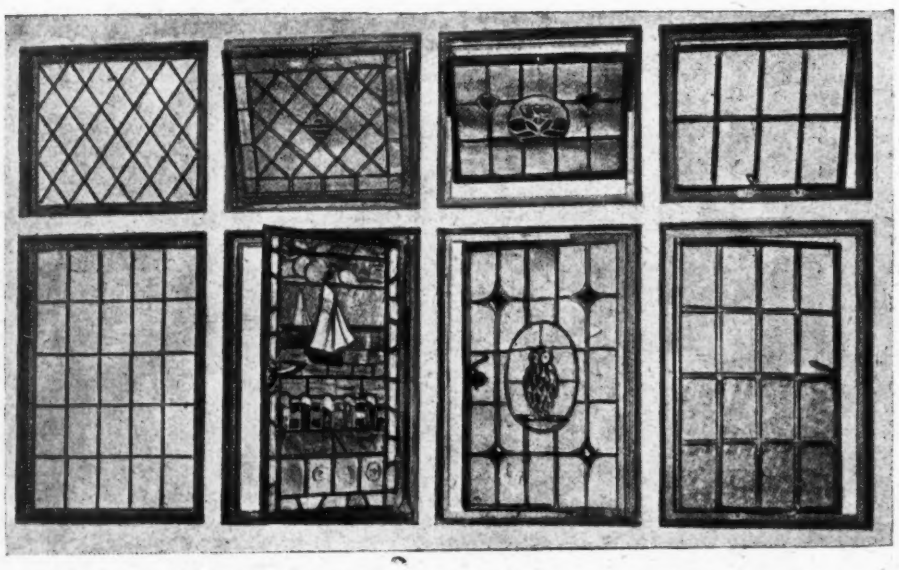
HESTON AND ISLEWORTH.—Plans passed by U.D.C.: —Extension to studio, Worton Hall, Isleworth, for Mr. H. W. Dodge; alterations to "North Star," Whitton-road, Hounslow, for Mr. C. W. Davis. The General Purposes Committee has directed the Surveyor to prepare a sketch scheme for the development on town planning lines of the land belonging to the Ecclesiastical Commissioners between Bath-road and Cranford-lane, and if possible, to submit such scheme at the next meeting of the Committtee.

HUCKNALL.—At the last meeting of the U.D.C. the committee appointed to deal with housing and town planning presented a report. Sites in the neighbourhood of Titchfield Park, Watnall-road, and

[*Continued on page* 144.]

*See also our List of Competitions, Contracts, etc.

HAYWARDS STEEL CASEMENTS



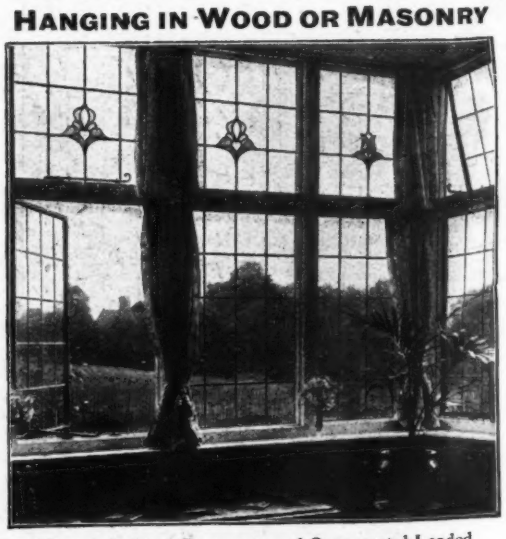
Fixed Frames and plain lead glazing. Diamond and Square Panes.

Casements and Fanlights, opening in. Glazed with "Prior" Glass.

Pivoted to open part in and out. With "Prior" Glazing and Ornaments.

Hung to open out, and with heavy glazing. Plain and Obscure Glass.

OPENING FRAMES FOR HANGING IN WOOD OR MASONRY



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PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	3 3 6

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	2 9 5	Best Blue Pressed Staffordshire	7 18 6
Best Stourbridge Fire bricks	9 5 0	Do. Bullnose	8 3 6
		Blue Wire Cuts	6 13 6
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	19 7 6	D'ble Str'tch'rs	24 17 6
		D'ble Headers	21 17 6
Headers	18 17 6	One Side and two Ends	25 17 6
Quoins, Bullnose and 4½in. Flats	22 17 6	Two Sides and one End	26 17 6
		Splays and Squints	24 7 6

Second Quality, £1 per 1,000 less than best.

Glazed bricks priced at so much each, 50 per cent. advance on list.

Permission to be obtained from Director of Supplies for Flettons, Wire Cuts, &c.

	s. d.		
Thames Ballast	17 0	per yard,	delivered
Pit Sand	16 0		
Thames Sand	17 0	" "	2 miles
Best Washed Sand	17 0	" "	radius
¾ in. Shingle for Ferro-Concrete	15 0	" "	Paddington.
½ in. "	17 0	" "	

Per ton, delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	3 8 0	..	3 11 0

Do. 61/- alongside at Vauxhall in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 2 2 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R.. per ft. cube	2 0
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R.. per ft. cube	2 1½
Do. do. delivered on road waggons at Nine Elms Depot	2 2½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Mileage Station G.W.R., per ft. cube	2 10½
Do. do. delivered on road waggons at above stations, per ft. cube	2 11½

White basebed, 2d. per ft. cube extra.
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average.*

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.	s. d.		s. d.
Ancaster in blocks	2 10	Closeburn Red Freestone	8 0
Beer in blocks	1 9	Grinshill in blocks	2 6
Darley Dale in blocks	2 10	Red & White Mansfield random block	4 8
		Yellow Magnesian Limestone do. do	3 9

YORK STONE, BLUE—*Robin Hood Quality.*

Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	5 8
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	4 6
6 in. rubbed two sides, ditto ..... "	4 11
3 in. sawn two sides slabs (random sizes) "	1 11
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	1 3
1½ in. to 2 in. ditto, ditto ..... "	1 1

HARD YORK—

Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	4 9
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	4 0
6 in. rubbed two sides ditto ..... "	5 0
in. sawn two sides slabs (random sizes) "	1 11
2 in. self-faced random flags .. Per Yard Super	6 0

WOOD.

TIMBER CONTROL ORDER, 1918.

Pursuant to paragraph 3 of the Timber Control Order, 1918, the Controller of Timber Supplies hereby gives notice that until further notice the following shall be the maximum prices at which imported timber may be sold. These prices are per standard landed and in store.

WHITE SEA REDWOOD

	1st £	2nd £	3rd £	4th £		1st £	2nd £	3rd £	4th £
4 × 11	59	57	55	53	2 × 9	53	51	49	47
4 × 9	56	54	52	50	2 × 8	52	50	48	46
4 × 8	53	51	49	47	2 × 7	52	50	48	46
4 × 7	53	51	49	47	3 × 6	unsorted 47			
2½ & 3 × 11	58	56	54	51	2½ × 6	unsorted 47			
2½ & 3 × 9	53	51	49	47	3 × 5	unsorted 46			
3 × 8	52	50	48	46	2½ × 5	unsorted 46			
3 × 7	52	50	48	46	2 × 6	unsorted 47			
2½ & 7/8	52	50	48	46	2 × 5	unsorted 45			
3 × 11	58	56	54	51	2 × 4	unsorted 45			

UNSORTED LARCHWOOD at 3rd Archangel Redwood Prices.

Boards, 1st and 2nd, £2 10s. extra.
Boards, 3rd and 4th, £1 10s. extra.

WHITE SEA WHITEWOOD.

	1st £	2nd £	3rd £		1st £	2nd £	3rd £
3 × 11	57	55	50	3 × 8 u/s	48		
3 × 10	54	52	49	3 × 7 u/s	48		
3 × 9	52	50	48	2½ & 2 × 8 u/s	48		

	£ s. d.		£ s. d.
2½ & 2 × 7 u/s	48 0 0	2½ × 5 u/s	46 0 0
3 × 6½ u/s	47 10 0	3 × 5 u/s	46 0 0
2 × 6½ u/s	47 10 0	2 × 5 u/	45 0 0
2½ & 3 × 6 u/s	47 0 0	2 × 4 u/s	45 0 0
2 × 6 u/s	47 0 0		

Boards, £1 10s. extra per std.

WOOD (*Continued*).

FEATHER EDGED BOARDS, £50 per std.

SAWN LATHS, 3s. 9d. per bundle.

U/S SLATING BATTENS (yellow and white and strips), £44.

5th ditto, £42.

SWEDISH AND NORWEGIAN FLOORING AND MATCHING.

U/S Red and White.

Per 100ft. super.	Per 100 ft. super
1¼in. P.E. at 71/6	¾in. P.E. at 37/-
1¼in. P.E. at 60/-	¾in. P.E. at 31/-
1in. P.E. at 47/-	¾in. P.E. at 23/-
¾in. P.E. at 41/-	

If tongued and grooved or tongued and grooved and matched, 9d. per square extra.

1in. × 11in P.E at £54	1in. × 9in. P.E. at £51
1in. × 10in. P.E. at £53	1in. × 8in. P.E. at £49

CANADIAN AND AMERICAN YELLOW PINE

	1st £	2nd £	3rd £		1st £	2nd £	3rd £
3 × 12 and up	80	69	67	3 × 8	62	55	53
3 × 11	78	63	61	3 × 7	60	53	51
3 × 10	66	58	56	3 × 4/6	58	51	49
3 × 9	64	56	54				

For complete specification and controlled prices, see issue of September 6, 1918, page 148.

Dry Wainscot Oak, per ft. super, as inch	0 3 0	..	—
¼ in. do. do.	0 2 3	..	—
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 3 0	.. 0 4 0	
Cuba, Mahogany	0 3 0	.. 0 4 0	
Teak (Rangoon, Moulmein or Java), per load	70 0 0	.. 85 0 0	
American Whitewood planks, per ft. cube	1 8 0	.. 1 10 0	
Scotch Glue, per lb.	0 2 9	.. —	
Liqu d Glue, pint	0 3 3	.. —	

SLATES.

Per 1,000 of 1,200 f.o.r. London.

		£ s. d.
Best Blue Bangor Slates,	20 by 10	24 10 0
	16 by 8	11 12 6
First quality " "	20 by 10	24 0 0
	16 by 8	11 2 6
Best Blue Portmadoc	20 by 10	23 15 0
	16 by 8	11 2 0
First quality "	20 by 10	23 5 0
" "	16 by 8	10 12 6

TILES.

Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	6 2 6
Ditto hand-made ditto	6 7 6
Ornamental ditto	6 10 0
Hip and valley tiles (per dozen)	0 14 0

METALS.

JOISTS, GIRDERS, ANGLES, C.I. COLUMNS, &c.

(Prices controlled by Ministry of Munitions.)

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	25	30	30	32½
Water	17½	27½	25	30
Steam	10	25	20	27½
Galvanised Gas	2½	22½	7½	25
" Water	+7½	20	Net.	22½
" Steam	+17½	17½	+7½	20

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6 fts.	4 2	3 1	3 8
2½ in. "	4 9	3 5	4 7
3 in. "	5 10	3 8	5 6
3½ in. "	6 6	4 7	6 6
4 in. "	7 1	5 2	7 3

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles s. d.
2 in. per yd. in 6fts. plain	2 9½	1 8½	2 4½
2½ in. " "	3 1	1 11½	2 9½
3 in. " "	3 8	2 6½	3 8
3½ in. " "	4 5	3 0	4 3½
4 in. " "	4 10	3 6	5 3

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices. 4 in., 8s. 2d. .. 5 in., 9s. 7d. .. 6 in., 11s. 9d.

	Per ton in London. £ s. d.		£ s. d.
IRON—			
Common Bars	17 10 0	to	18 10 0
Staffordshire Crown Bars - good merchant quality	18 0 0	..	19 0 0
Staffordshire "Marked Bars"	20 0 0	..	21 0 0
Mild Steel Bars	21 0 0	..	21 10 0
Steel Bars, Ferro-Concrete quality, basis price	19 10 0	..	20 10 0
Hoop Iron, basis price	22 10 0	..	23 10 0
" " Galvanised	33 0 0	..	—
Sheet Iron Black—			
Ordinary sizes to 20 g.	23 0 0	..	23 10 0
" 24 g.	24 0 0	..	24 10 0
" 26 g.	25 0 0	..	26 0 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	.. —	Nominal prices.
Ordinary sizes to 22 g. and 24 g.	34 0 0	.. 34 10 0	Nominal prices.
Ordinary sizes to 26 g.	36 0 0	.. 36 10 0	Nominal prices.

METALS (*Continued*).

	Per ton in London £ s. d.		£ s. d.
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	35 10 0	..	Nominal prices.
" " 22 g. and 24 g.	36 0 0	..	Nominal prices.
Ordinary sizes to 26 g.	39 0 0	..	Nominal prices.
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	Nominal prices only.
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	Nominal prices only.
Ordinary sizes, 26 g.	32 10 0	..	Nominal prices only.
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	26 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	26 15 0	..	—
Best Soft Steel Sheets, 26 g.	28 10 0	..	—
Cut Nails, 3 in. to 6 in.	31 0 0	..	32 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	46 0 0	..	—
Pipe in coils	46 10 0	..	—
Soil Pipe	49 10 0	..	—
Compo pipe	50 10 0	..	—
NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.			
Old lead, ex London area, at Mills ..... per ton	29 0 0	..	—
Do., ex country, carriage forward ..... per ton	30 0 0	..	—
COPPER—			
Strong Sheet ..... per lb.	0 2 3	..	—
Thin " ..... "	0 2 4	..	—
Copper nails ..... "	0 2 3	..	—
Copper wire ..... "	0 2 4	..	—
TIN—English Ingots "	0 3 9	..	—
SOLDER—Plumbers' "	0 1 9	..	—
Tinmen's "	0 2 3	..	—
Blowpipe "	0 2 7	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.	
15 oz. fourths	7d.	32 oz. fourths	10d.
" thirds	7½d.	" thirds	11d.
21 " fourths	8d.	Fluted, Obscured and Enamelled Sheet,	
" thirds	8½d.		
26 " fourths	9d.	15 oz.	7½d.
" thirds	9½d.	21 "	8½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate (unobtainable)	—
¼ Rough rolled and rough cast plate	6d.
⅜ Rough rolled and rough cast plate	6½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	7½d.
Rolled Sheet	6d.
White Rolled Cathedral	6d.
Tinted do.	6½d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes ..... per gallon	0 8 0
" " "	in barrels ..... "	0 8 ¾
" " "	in drums ..... "	0 8 7
Boiled " "	in barrels ..... "	0 8 7
" " "	in drums ..... "	0 9 0
Turpentine	in barrels ..... "	0 10 9
"	in drums ..... "	0 11 0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		72 10 0
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	102 10 0
Red Lead, Dry (packages extra)	per ton	58 0 0
Best Linseed Oil Putty	per cwt.	1 6 0
Filocel	per cwt.	1 0 6
Size. X D Quality	fkn.	0 5 6

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak	0 16 0
Pale Copal Oak	0 17 0
Superfine Pale Elastic Oak	0 19 0
Fine Extra Hard Church Oak	0 18 0
Superfine Hard-drying Oak, for seats of Churches	1 1 0
Superfine Pale Elastic Carriage	1 1 0
Fine Pale Maple	0 14 0
Finest Pale Durable Copal	1 5 0
Extra Pale French Oil	1 4 0
Eggshell Flatting	1 0 0
White Pale Enamel	1 6 0
Extra Pale Paper	0 16 0
Best Japan Gold Size	0 12 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 12 0
Brunswick Black	0 10 0
Berlin Black	0 16 0
Knotting	1 10 0
French and Brush Polish	1 0 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

(*Continued from page* 14 .)

Derbyshire-lane had been inspected, and the committee's recommendation was that the Council proceed with a scheme for the erection of 300 houses for the working classes. A survey had been made of the land by the architects, who had been asked to submit schemes for houses to let at 7s. or 8s. per week.

HULL.—At a meeting of the Health Committee, it was reported that the L.G.B. had sanctioned the borrowing of £36,000 for the purchase of a site in Hull for a housing scheme. Negotiations for the purchase of land in North Hull were authorised. The City Architect was asked to report on the best means of developing land in East Hull for a small housing scheme.

KENNINGTON.—It has been decided to complete at once the erection of St. Anselm's Church, Kennington, situated on the Duchy of Cornwall estate.

LEYTON.—Plans passed by U.D.C.: Alterations and additions to Royal Lodge, High-road, Leytonstone, for Mr. A. Kind: alterations, 862, High-road, Leytonstone, for Mr. A. Picken.

MANSFIELD WOODHOUSE.—The U.D.C. has been requested by a public meeting to apply to the L.G.B. for permission to raise a loan to enable them to erect a Town Hall, with assembly rooms, reading room, library, and baths, as a war memorial.

MOBBERLEY.—The parishioners of Mobberley, Cheshire, have decided to erect a parish hall as a war memorial, and it is expected about £2,000 will be required.

NEWARK.—At the last meeting of the T.C., the Highways Committee reported that the Duke of Newcastle had accepted the offer of £550 per acre for land for municipal building, the Council having decided to build 100 houses as a first instalment.

NORTHAMPTON.—Plans passed by T.C.: Additions to factory, Wycliffe-road, for Messrs. Hornby & West; additions to shop, St. Leonard's-road, for Mr. F. C. Ashford.

NORTON.—The U.D.C. has decided to adopt a scheme for the provision of 24 houses for the working-class.

NOTTINGHAM.—The Nottingham Cripples Guild and the Ransom Memorial Trustees have, offered to hand over the sum of over £6,000 for the erection of an institution for the treatment of children suffering from surgical tuberculosis.

PERTHSHIRE.—As a permanent memorial to Perthshire men who have fallen in the war, the restoration of St. John's is to be attempted.

PORT GLASGOW.—The T.C. have agreed to proceed with the erection of new gasworks on the ground at Fyfe Park, recently acquired by them, on the Glasgow-road, about a mile to the east of the burgh. The estimated cost of the works is £60,000.—The T.C. has accepted the offer of Sir Hugh Shaw Stewart of 21 acres of land on the estate of Chapelton, to enable the proposed housing scheme to be carried out.

PRESTON.—Plans passed by T.C.:—Workshop, Peel Hall-street, for Messrs. R. Baron, Ltd.; aviaries, French wood-avenue, for Mr. H. Wilding; workshop, Avenham-road, for Messrs. G. Hill & Sons.

RICHMOND (SURREY).—The Earl of Dysart has given permission for the erection of the Richmond War Memorial outside his lodge gates in the Petersham-road. It is to take the form of a lion at the base of a lofty plinth, and is to bear the names of those who have died, as well as those who have served abroad. It is also proposed to erect a simple cross, 18 ft. high, in the western corner of the parish churchyard, and on this is to be inscribed the names of those who have fallen in the war.

RUGBY.—Mrs. Arthur James, of Coton House, Rugby, has purchased a site near the centre of the town, upon which she proposes to erect a public hall for the use of the town in memory of her late husband, Mr. Arthur James, a former High Sheriff of Warwickshire, the only stipulation being that the hall be called the "Arthur James Memorial Hall."

SALFORD.—The B.G. has offered 20 acres of land to the T.C. for housing purposes.

SAMFORD.—The R.D.C. has decided to purchase two small sites for colleges, and to engage Mr. R. J. Girling as architect to prepare plans for submission to the L.G.B.

SCARBOROUGH.—Mr. R. C. Maxwell, an inspector of the L.G.B. is to hold an inquiry into the application by the Corporation for a Provisional Order empowering them to erect or alter houses, and to close the Marine-drive on occasions.

SELBY.—At a special meeting of the U.D.C., it was unanimously decided to include certain new land in a town-planning scheme for Selby, and to apply to the L.G.B. for authority to carry the scheme into effect.

SOUTHPORT.—The Town Planning Committee is negotiating for 8¼ acres of land at Crossens on which it will erect workmen's dwellings.

STORNOWAY.—In view of the great scarcity of houses in Stornoway, Lord Leverhulme, who owns the Island of Lewis, proposes building 300 dwelling houses this year, 300 next year and 300 in 1921, and does not intend charging any ground rent for feu duty for the sites.

ST. THOMAS.—The R.D.C. has purchased three small sites on which to erect cottages.

SUDBURY (SUFFOLK).—The T.C. has purchased several plots of land on which to erect working class houses.

SWANSEA.—The T.C. has agreed that the plans, specifications and estimates submitted by the borough estate agent for the erection of 500 houses on the summit site at Townhill be approved, and that the town clerk be instructed to forward the same immediately to the L.G.B.; and also for sanction to borrow the amount involved.

TROON.—The Duke of Portland is prepared to let the T.C. have ground for housing.

WALTHAMSTOW.—Plans passed by U.D.C.: Cinema addition, St. James's-street, for Mr. R. Hirst; sanitary improvements, Sutherland-road; stable and loft, 156, High-street, for Mr. A. Attwell; house, West-avenue for Mr. Ernest James.

WELLINGBOROUGH.—The U.D.C. has adopted a scheme for building 60 houses, which it is expected will be the first instalment of 500.

WELLS (NORFOLK).—A public meeting of inhabitants has decided on a working men's institute as a war memorial.

WEMBLEY.—The U.D.C. has decided to apply to the L.G.B. for sanction to borrow £7,000 for the purchase of land for houses for the working classes.

WOLVERHAMPTON.—Sanction has been given by the L.G.B. to the borrowing of £400 for extension to the municipal abattoir.

YORK.—The Health Committee recommend application to the L.G.B. for sanction to a loan of £133,295 for the erection of 238 houses, and the necessary works. A further 300 houses must, the Committee say, be put in hand at an early date.

FIRES.

GLASGOW.—Some damage has been done by fire to the premises of Messrs. A. and D. Rennie, brass founders, 75, Washington-street.—Damage estimated at £2,000 was caused by an outbreak of fire in the premises of Messrs. Millen Bros., constructional engineers, Finnieston-street.

LONDON.—The premises of Messrs. Frost Bros., rope manufacturers, of Commercial-road, have been badly damaged by fire.

WICK.—Damage estimated at over £2,000 has been caused by fire in the sawmill and sheds belonging to Messrs. D. Sutherland & Son, wood merchants, Martha-terrace. The flames extended to the adjoining sheds and stores belonging ot Messrs. Duncan & Jamieson and others.

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday*.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.

BATH.—For repairs at 58, Walcot-street, for the Corporation:—
* Watts Bros..... £65 15 1

TRADE NEWS.

IN reference to the illustrations and correspondence in our pages recently regarding the housing scheme which was carried out at Messrs. Vickers' Estate, Crayford, Messrs. W. T. Lamb & Sons, 43, Shoe Lane, London, E.C.4., were responsible for the roofing tiling on approximately 850 houses on the estates at Crayford, Erith and Byfleet, and they are also carrying out the slating on several hundred houses at Messrs. Dorman, Long & Co.'s housing scheme, Redcar, Yorks.

Messrs. H. P. Williams & Co., of Cromwell House, Fulwood-place, have produced a plastic compound which is called "Leak-Not" Compound. Many buildings, especially factories and workshops, which, perforce, have been neglected during the War, will require repairing and renovating, and an efficient material of this kind will be in much demand.

We have received from Messrs. The Val de Travers Asphalte Paving Co., Ltd., Hamilton House, Bishopsgate, E.C., a calendar for the current year, mounted on metal, giving a design showing how asphalte paving is accomplished.

PATENTS.

APPLICATIONS PUBLISHED.*

121,536.—N. Rees: Bricks or blocks used in honeycomb work of regenerative hot-air stoves.

121,552.—Vickers, Ltd., Sir J. McKechnie and B. N. Wallis: Bracing of structural or built-up girders.

121,553.—Waygood-Otis, Ltd., and C. W. Hildred: Elevators and the like.

121,557.—J. S. E. De Vesian, L. G. Mouchel & Partners, and Ferro-Concrete Ship Construction Co.: Ships, barges, or the like built of reinforced concrete.

121,558.—C. R. J. Wood, L. G. Mouchel & Partners, and Ferro-Concrete Ship Construction Co.: Ships, barges, or the like built of reinforced concrete.

121,559.—W. Alexander: Skids or inclined platforms for use in connection with the loading and unloading of vehicles.

* **All these Applications are now in the stage in which opposition to the grant of Patents upon them may be made.**

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